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NASA CR-144948-3

Part 3 of 3

A COMPILATION OF SPACECRAFT LOADS DATA
FROM
FOUR TITAN CENTAUR LAUNCH VEHICLE FLIGHTS
VOLUME V: TIME HISTORY PLOTS

Compiled by George Kachadourian

(NASA-CR-144948-Pt-3) A COMPILATION OF SPACECRAFT LOADS DATA FROM FOUR TITAN CENTAUR LAUNCH VEHICLE FLIGHTS. VOLUME 5, PART 3: TIME HISTORY PLOTS (General Electric Co.) 87 p HC A05/MF A01 CSCL 22B G3/15

N77-28195

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42489

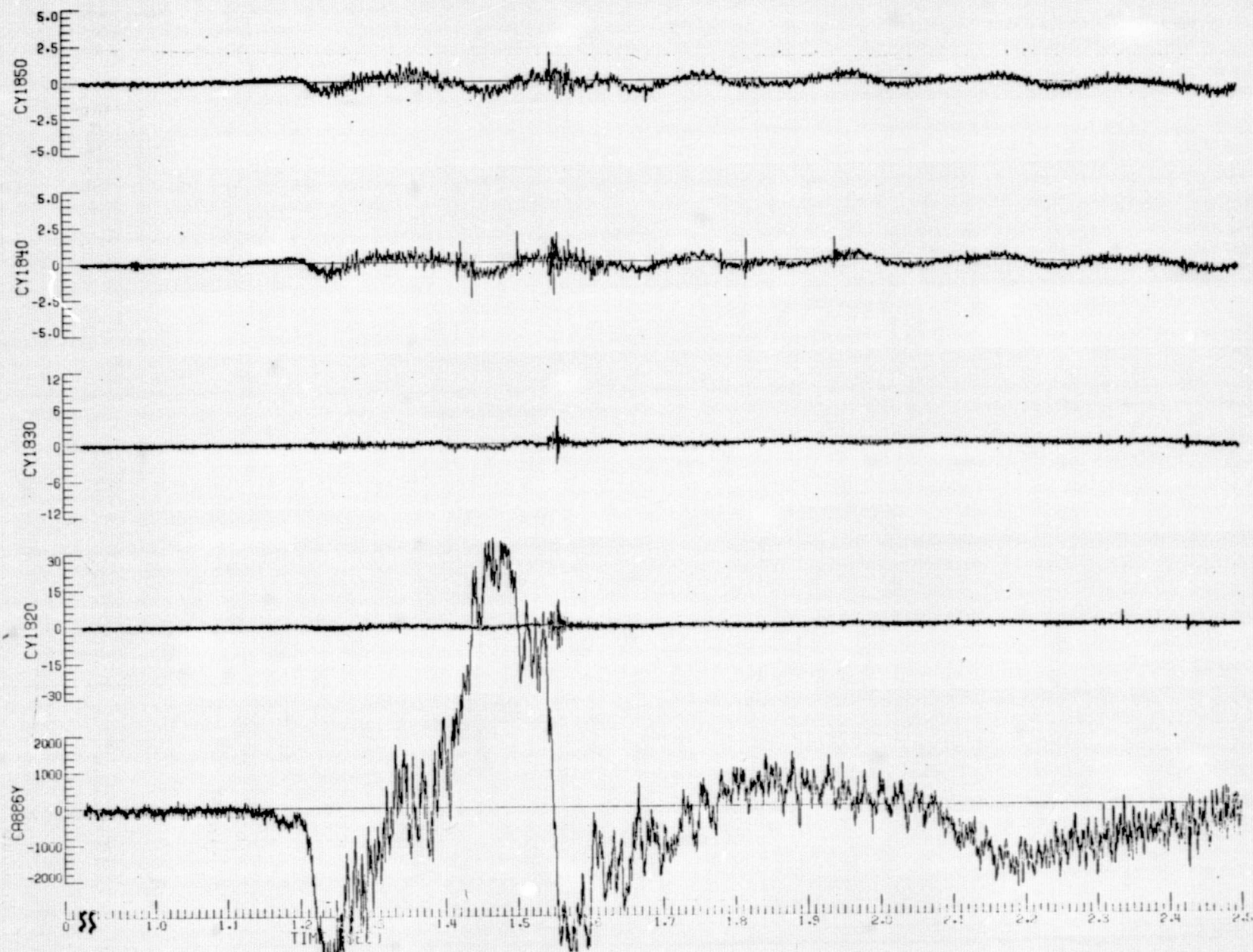


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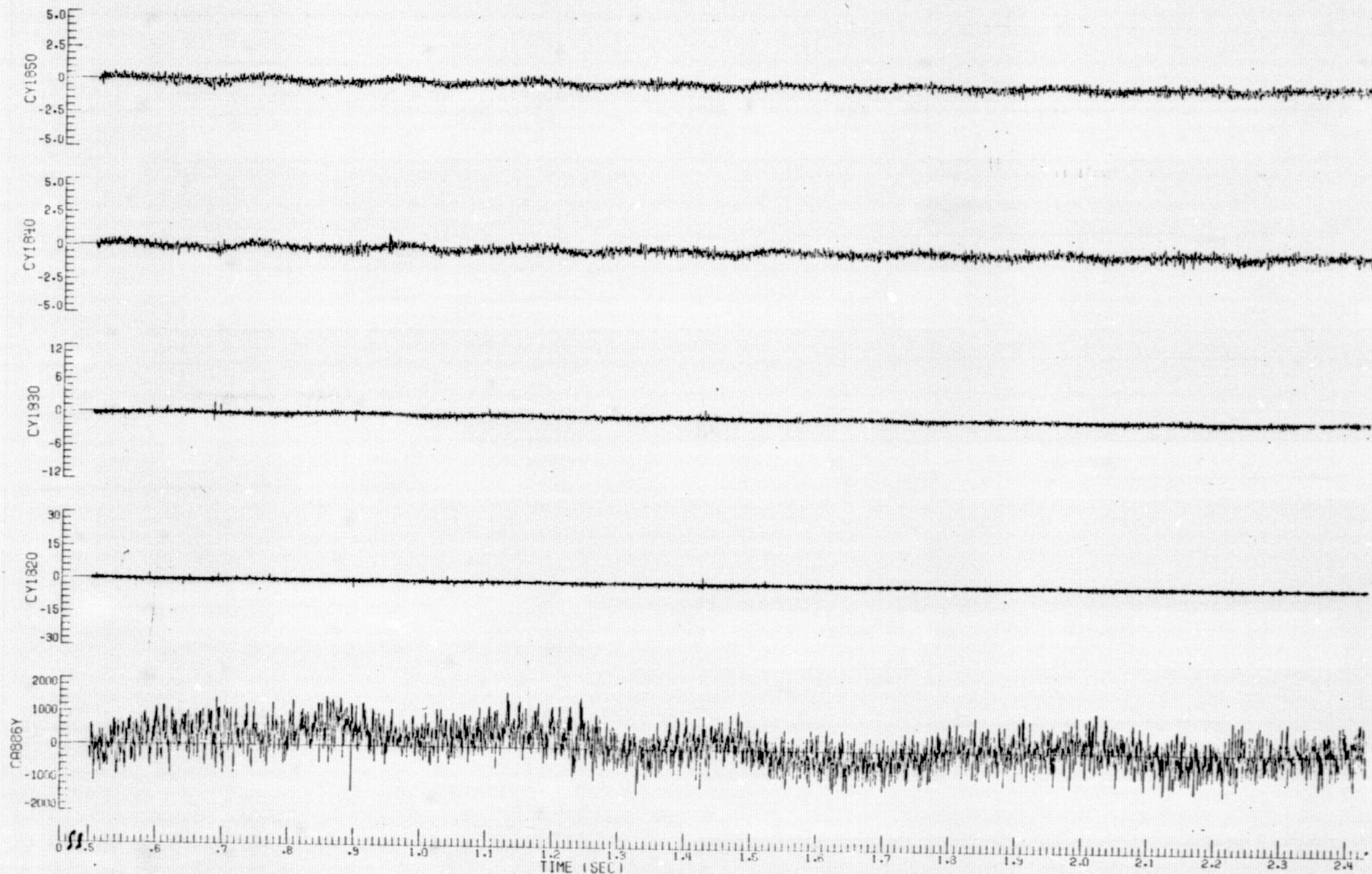
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

January 1977



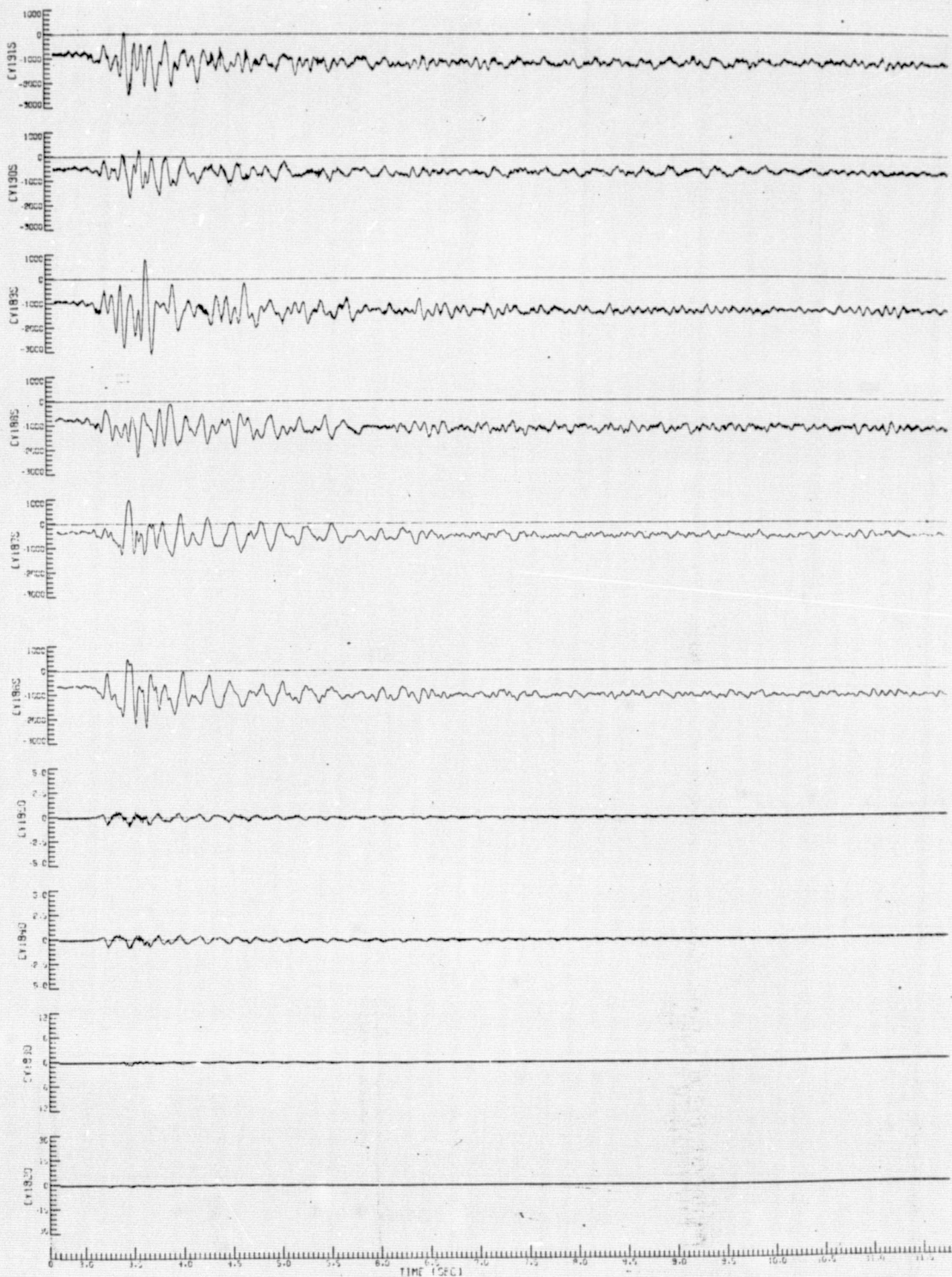
O = 18:38:59 = 67139 sec.

FIGURE 98. TC-3 Lift-Off Vib & Mic - Part 1 - 4096 sps



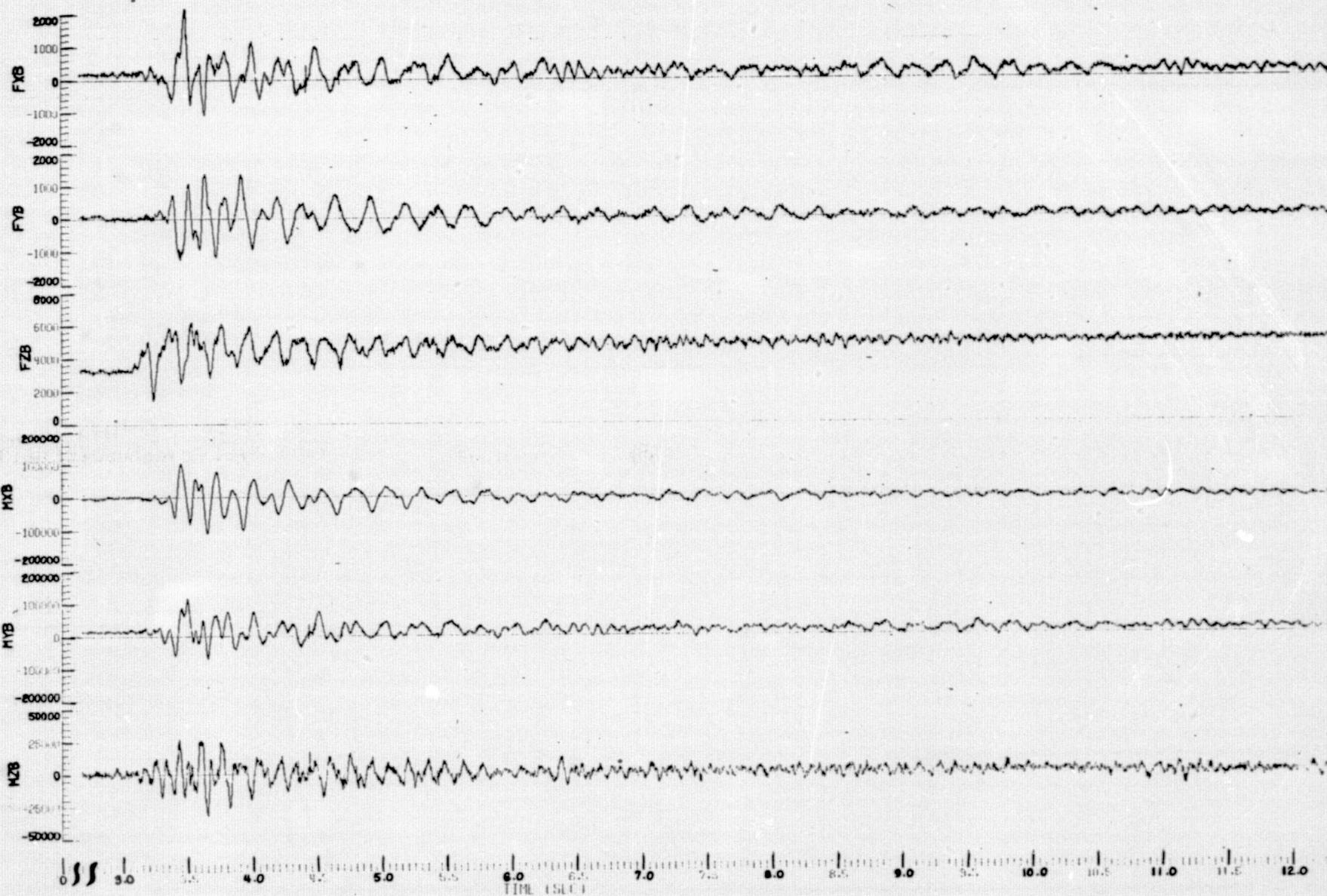
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FIGURE 99. TC-3 Lift-Off - Vib & Mic - Part 2 - 4096 sps



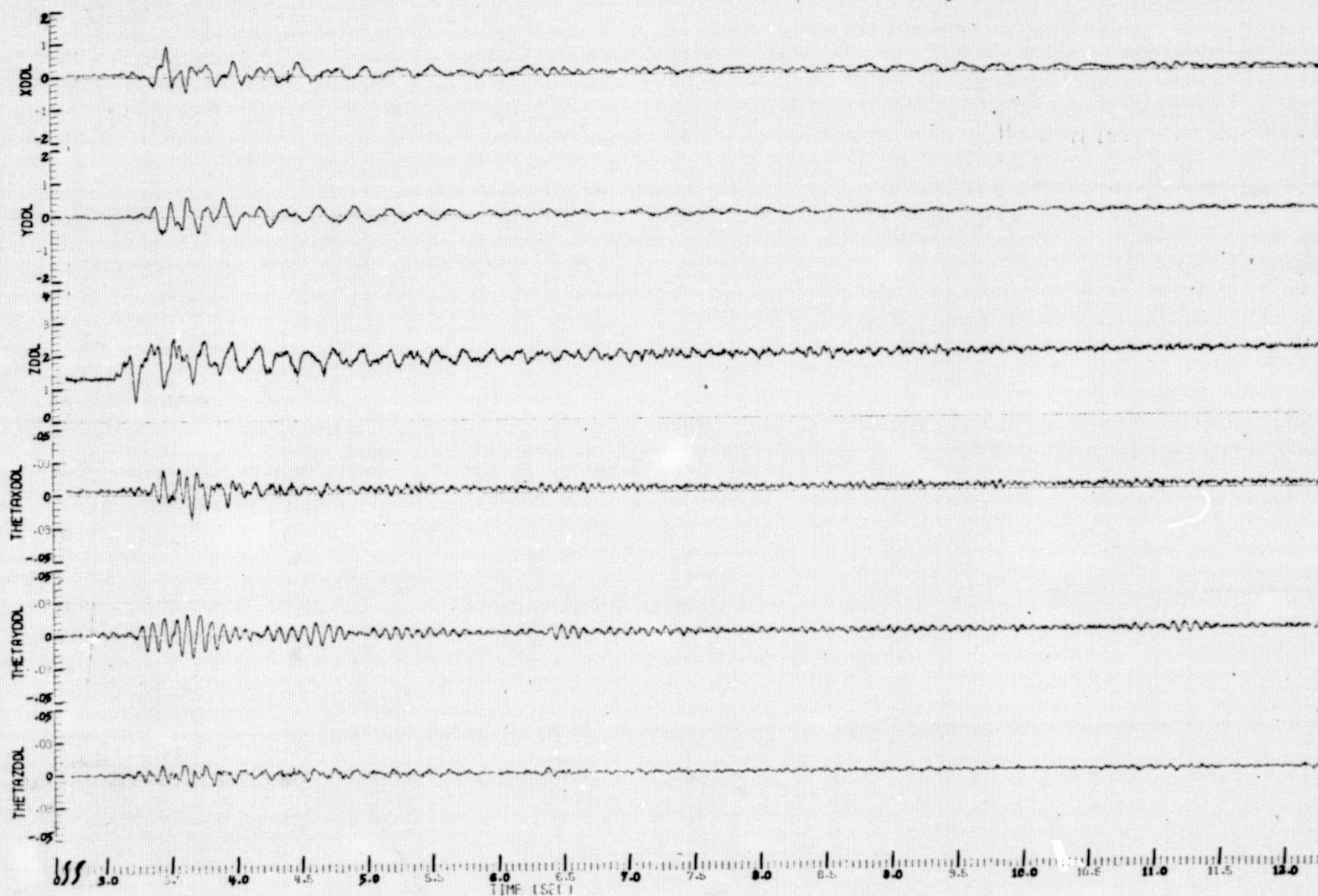
O = 18:38:57 = 67137 sec.

FIGURE 100. TC-3 Lift-Off - Strain & Vib - 1024 sps



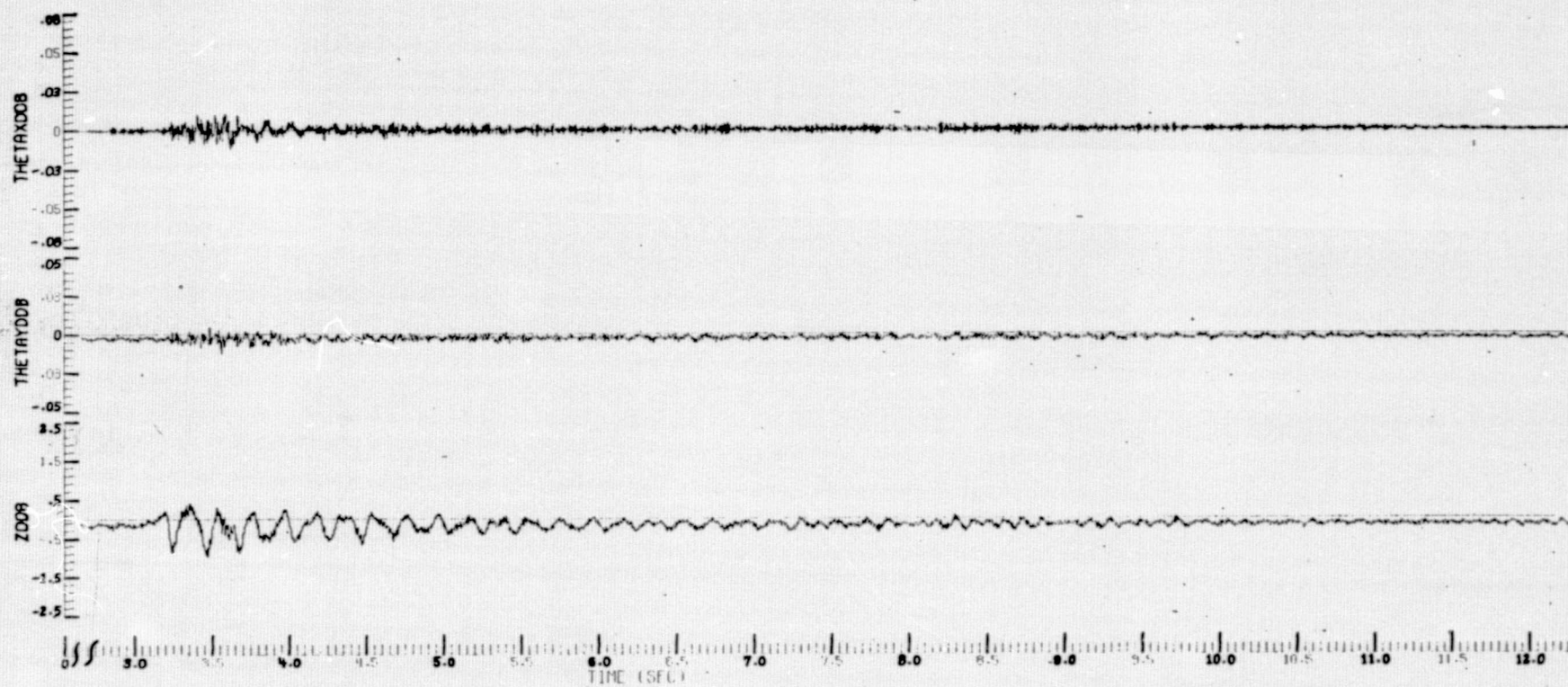
O = 18:38:57 = 67137 sec.

FIGURE 101. TC-3 Lift-Off - Forces & Moments - 1024 sps



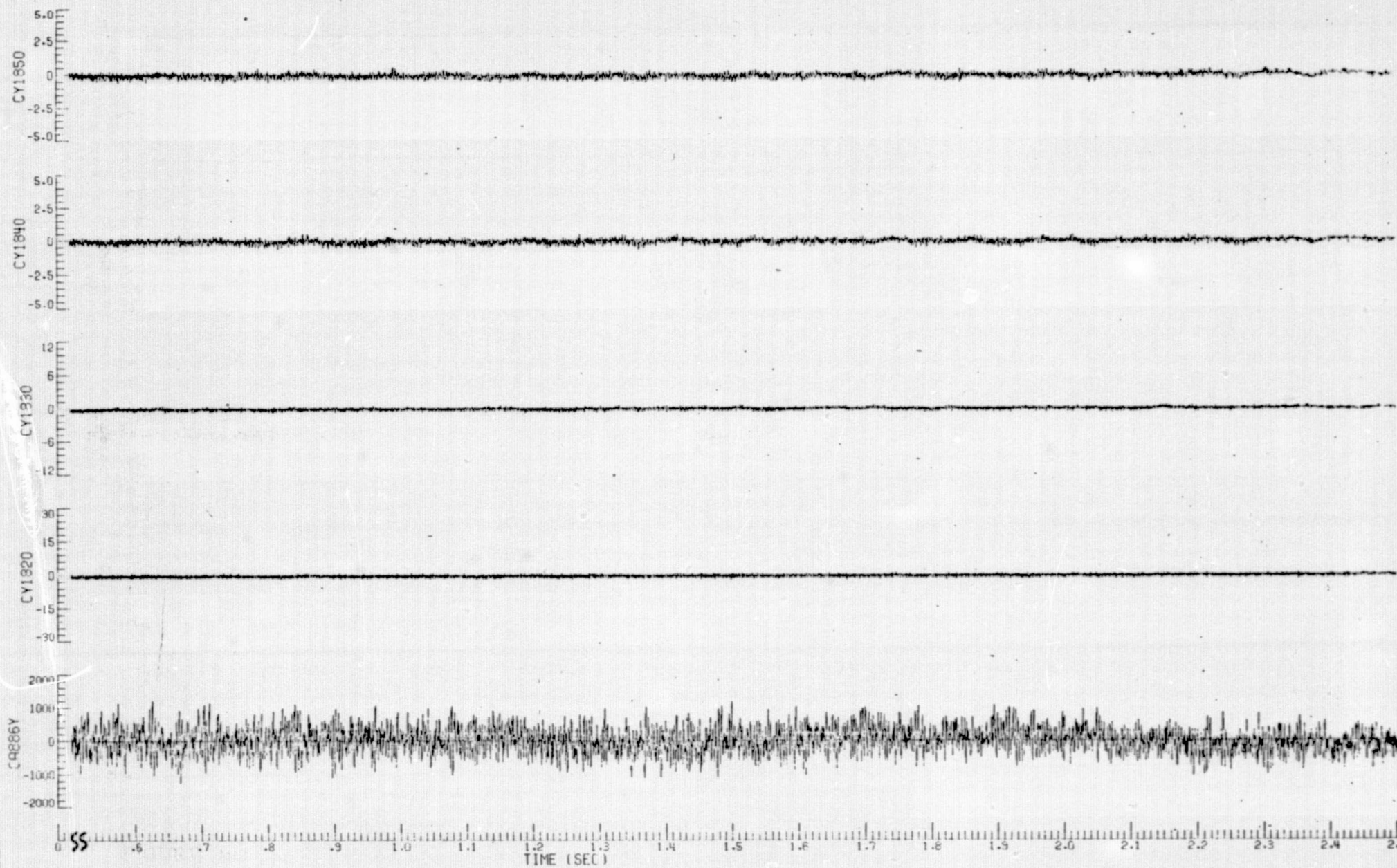
O = 18:38:57 = 67137 sec.

FIGURE 102. TC-3 Lift-Off - VLC cg Accelerations - 1024 sps



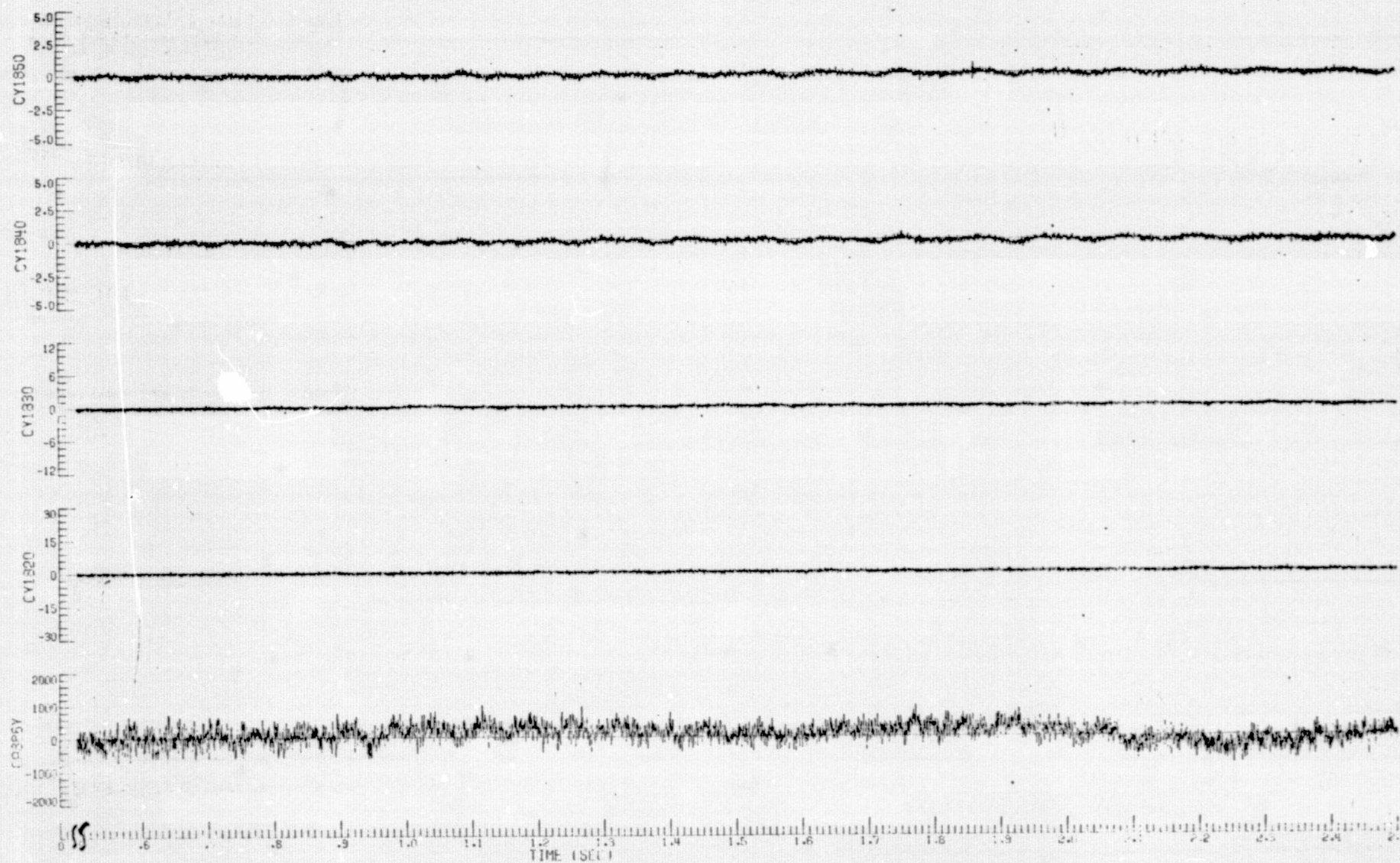
O = 18:38:57 = 67137 sec.

FIGURE 103. TC-3 Lift-Off - Bus Accelerations - 1024 sps



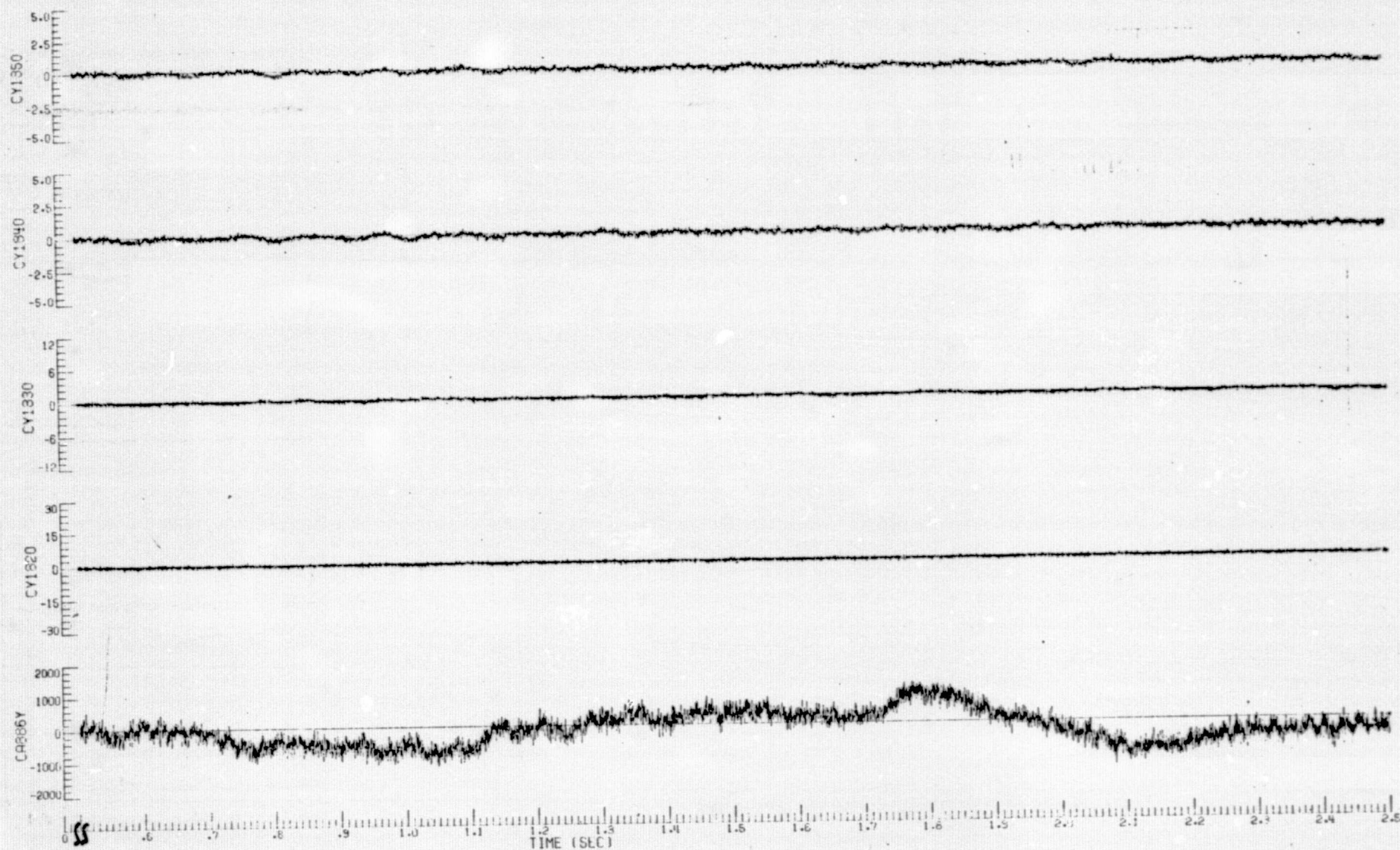
O = 18:39:37 = 67177 sec.

FIGURE 104. TC-3 - MAX Q Vib & Mic T+37.5 - T + 39.5 4096 sps



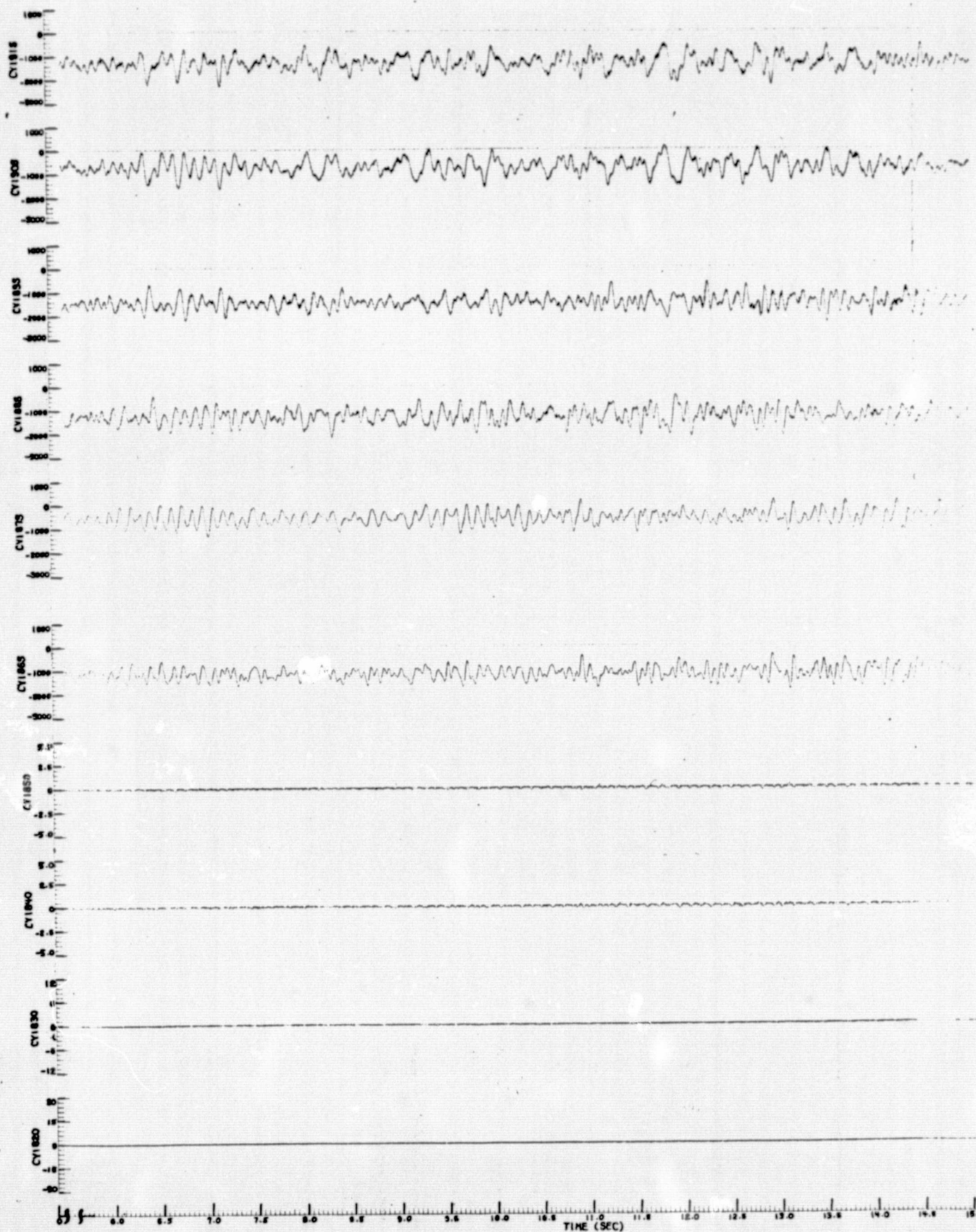
O = 18:39:39 = 67179 sec.

FIGURE 105. TC-3 MAX Q - Vib & Mic - T + 39.5 - T + 41.5



O = 18:39:41 = 67181 sec.

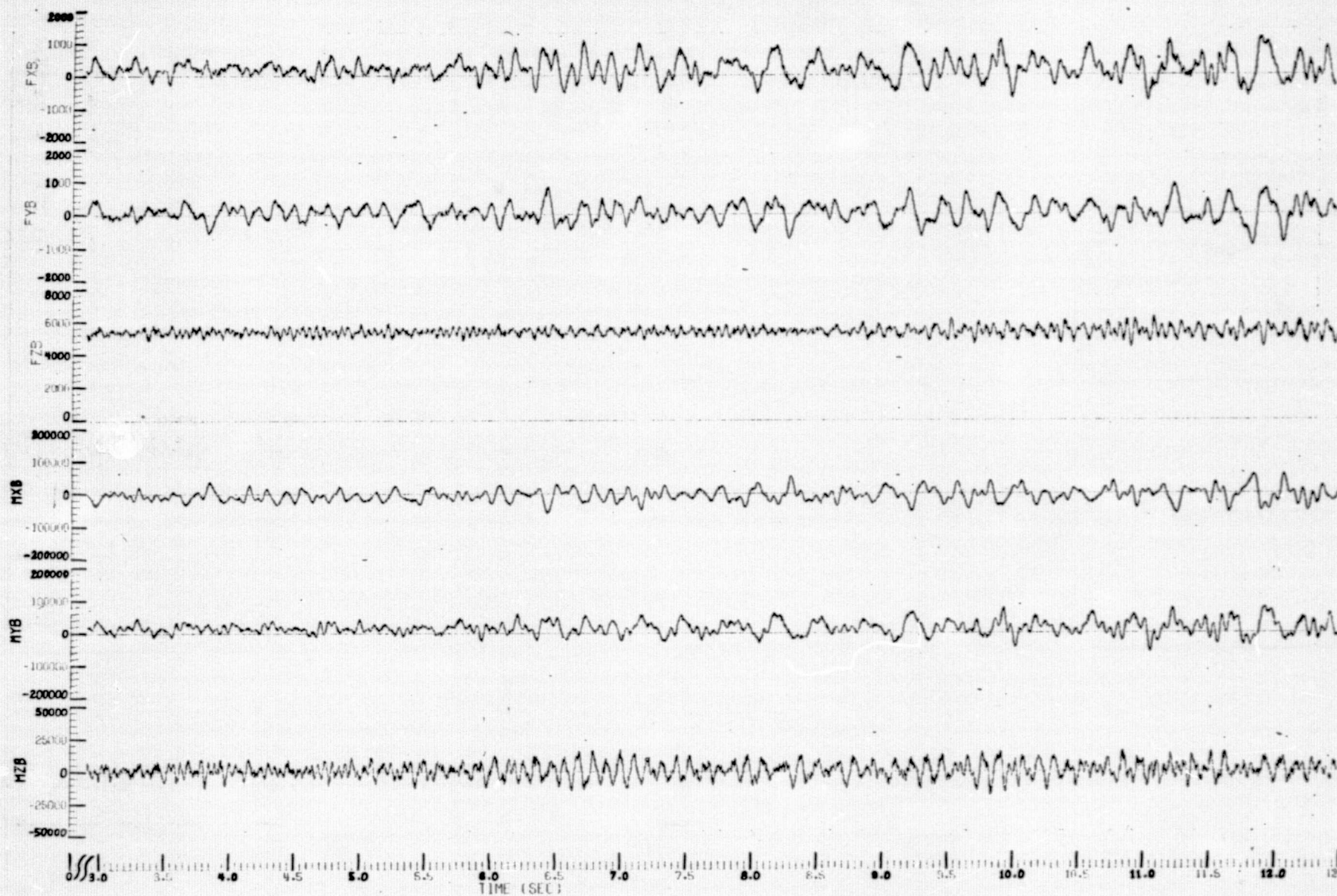
FIGURE 106. TC-3 MAX Q - Vib & Mic - T + 41.5 - T + 43.5



O = 18:29:29 = 67169 sec.

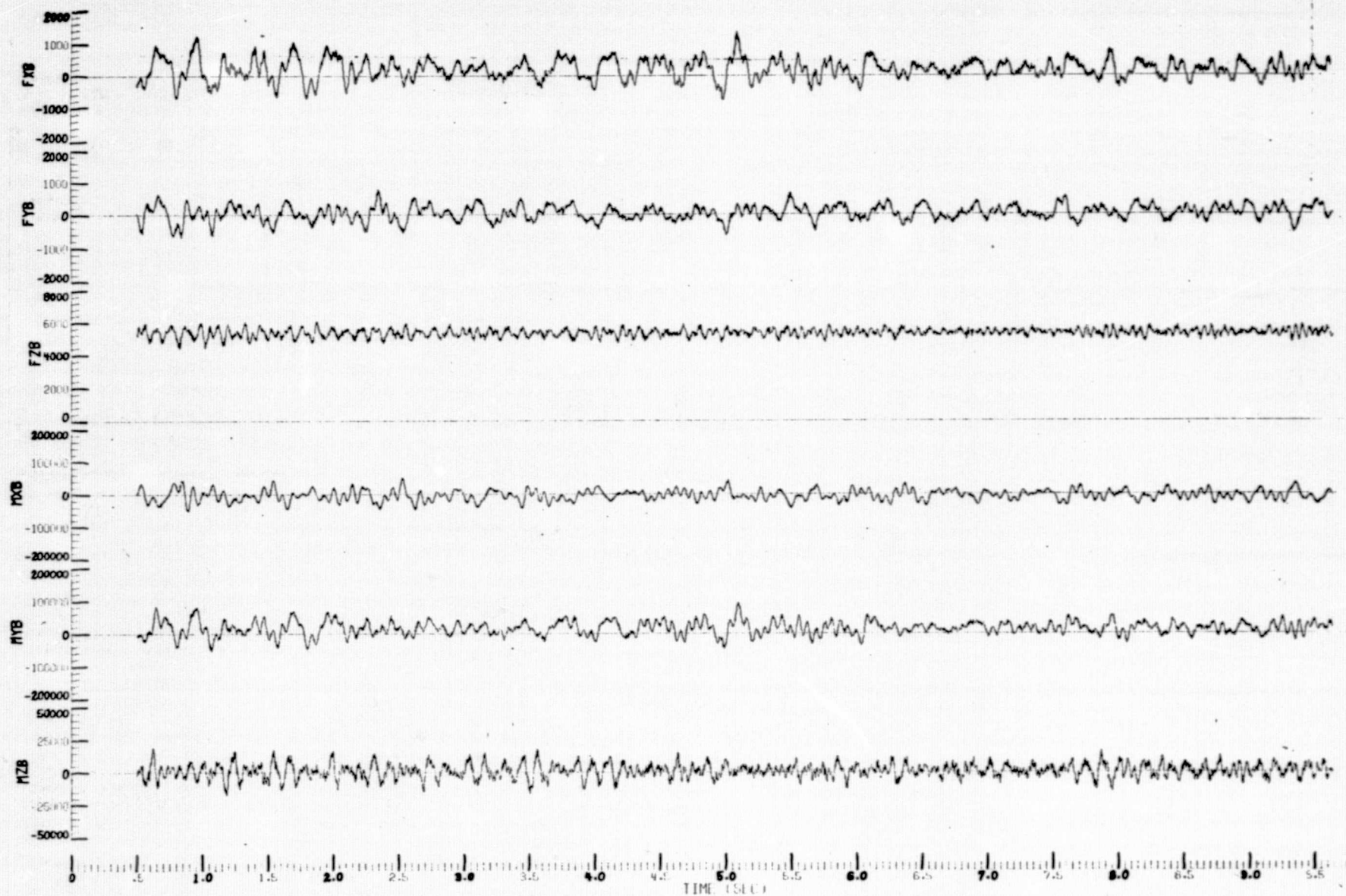
FIGURE 107. TC-3 MAX Q - Strain & Vib - T + 34.5 - T + 44 - 1024 sps

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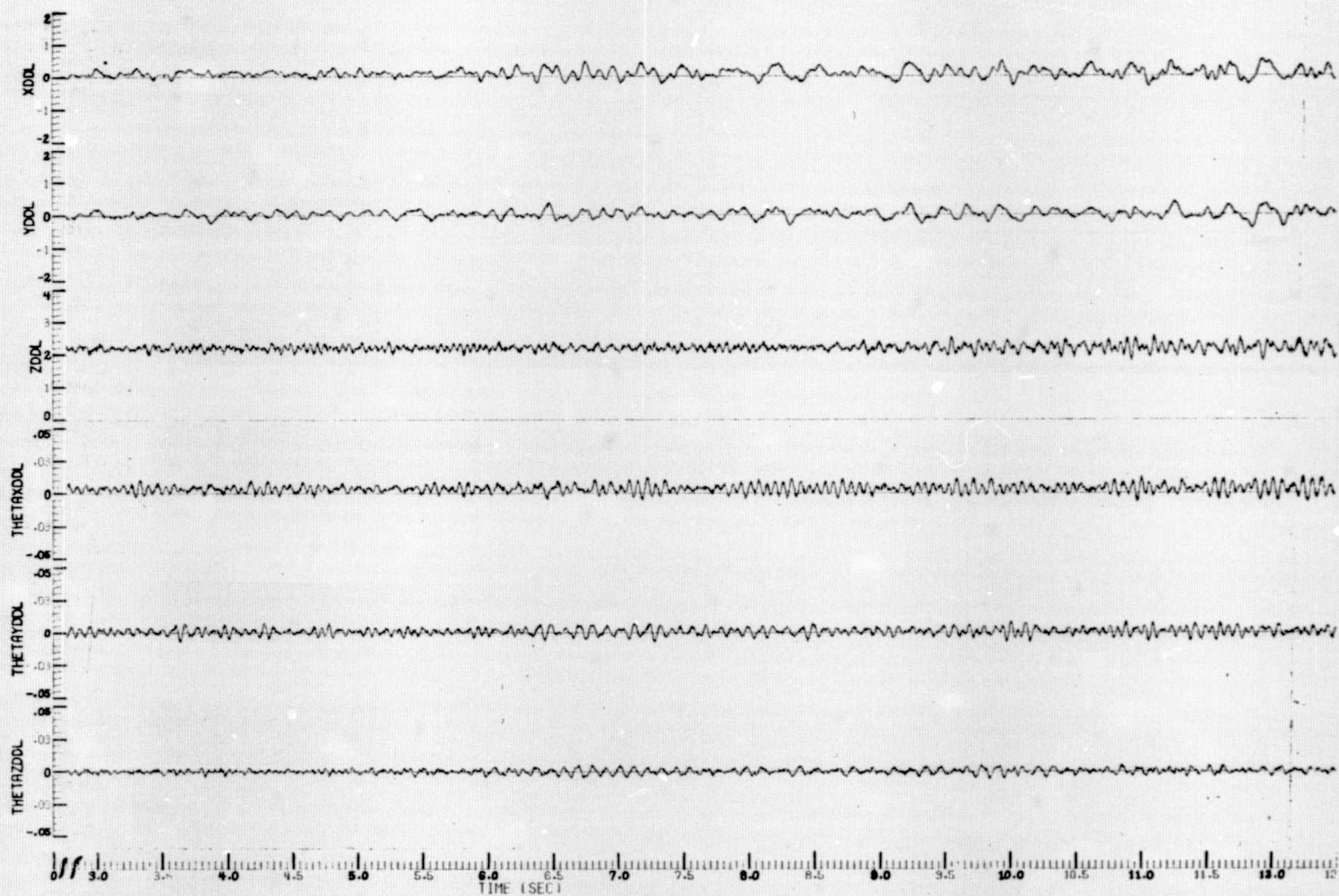
O = 18:39:29 = 67169 sec.

FIGURE 108. TC-3 MAX Q - Forces & Moments - T + 32 - T + 41.5 - 1024 sps



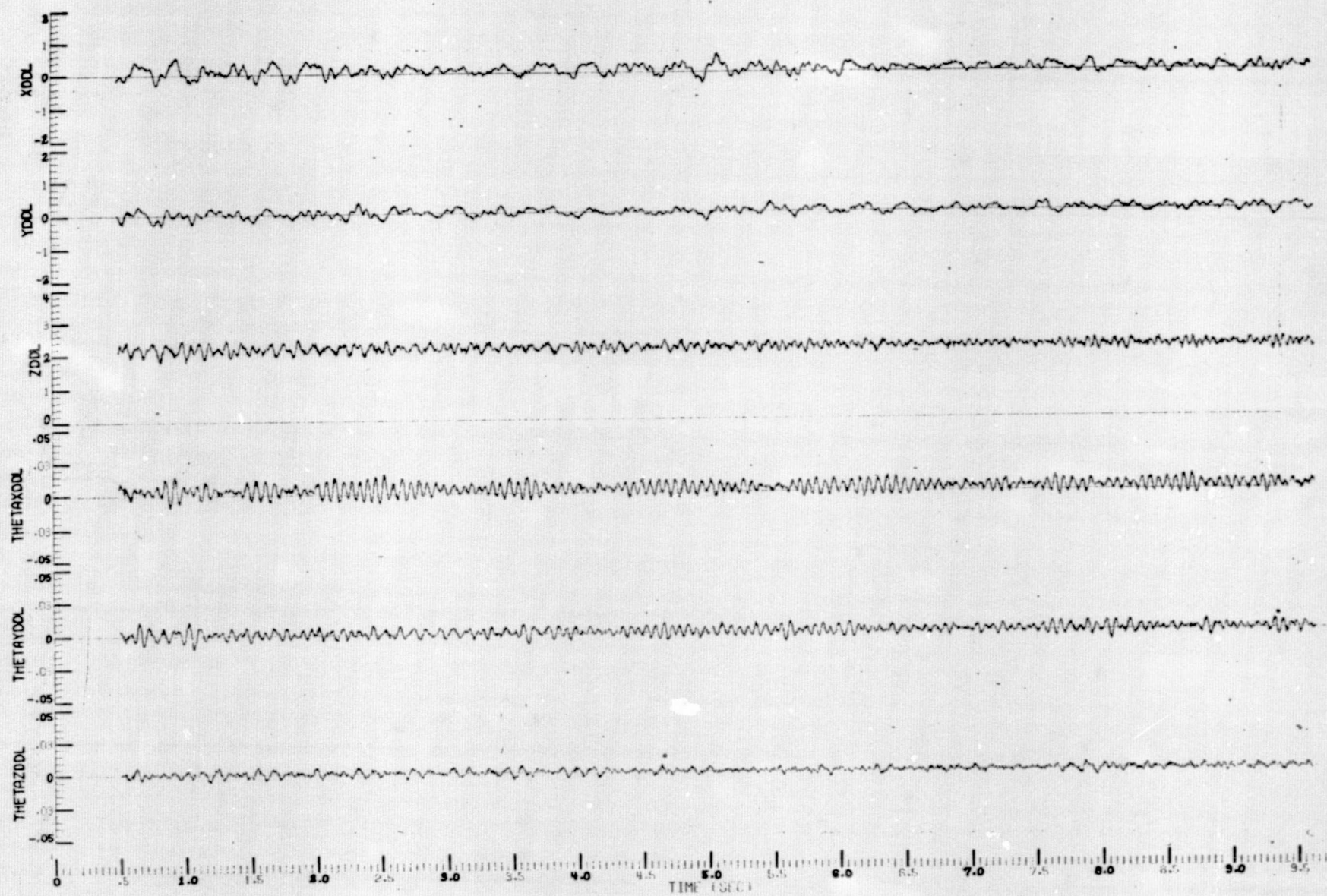
O = 18:39:41 = 67181 sec.

FIGURE 109. TC-3 MAX Q - Forces & Moments - T + 41.5 - T + 50.5



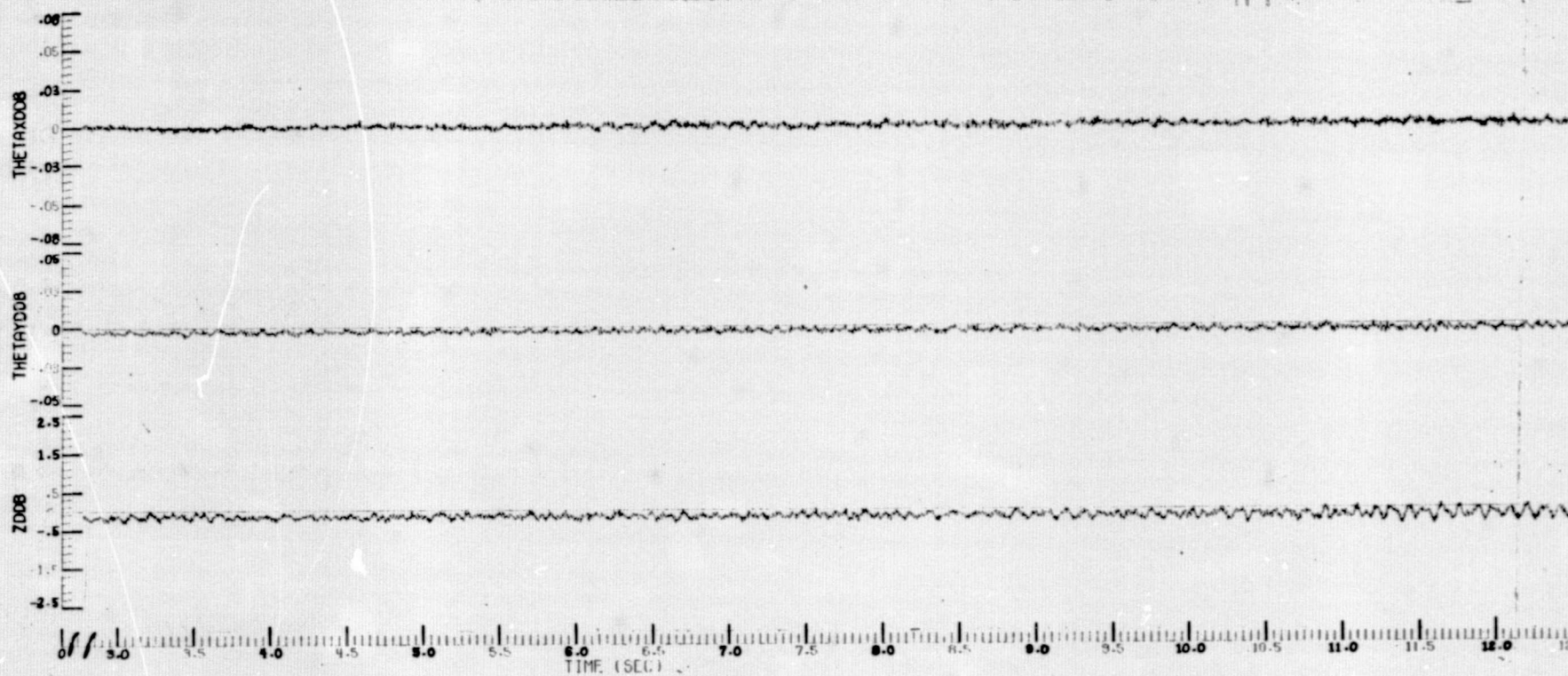
O = 18:39:29 = 67169 sec.

FIGURE 110. TC-3 MAX Q VLC cg Accelerations - T + 32 - T + 41.5 - 1024 sps



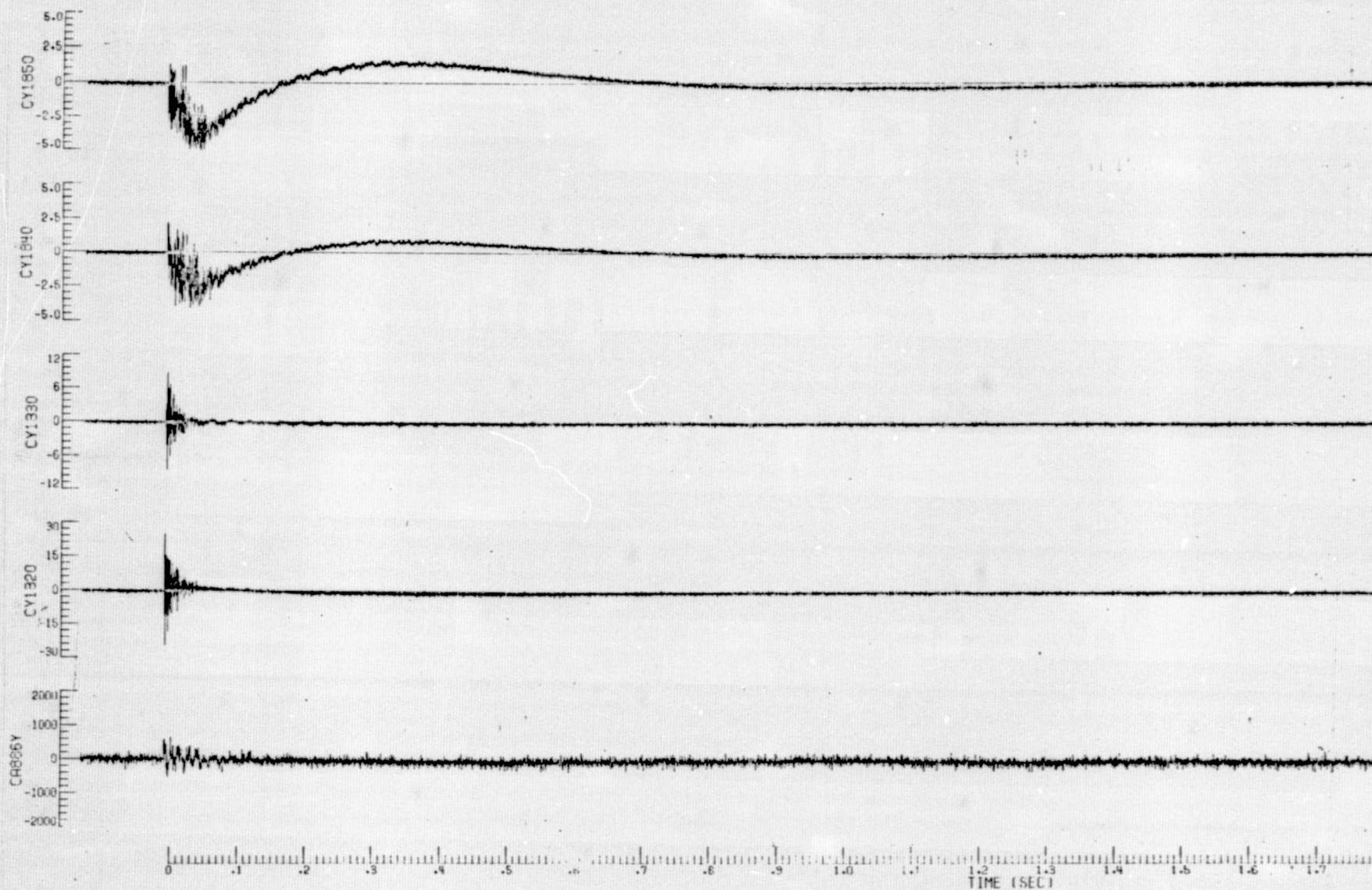
O = 18:39:41 = 67181 sec.

FIGURE 111. TC-3 MAX Q - VLC og Accelerations - T + 41.5 - T + 50.5 - 1024 sps



O = 18:39:29 = 67169 sec.

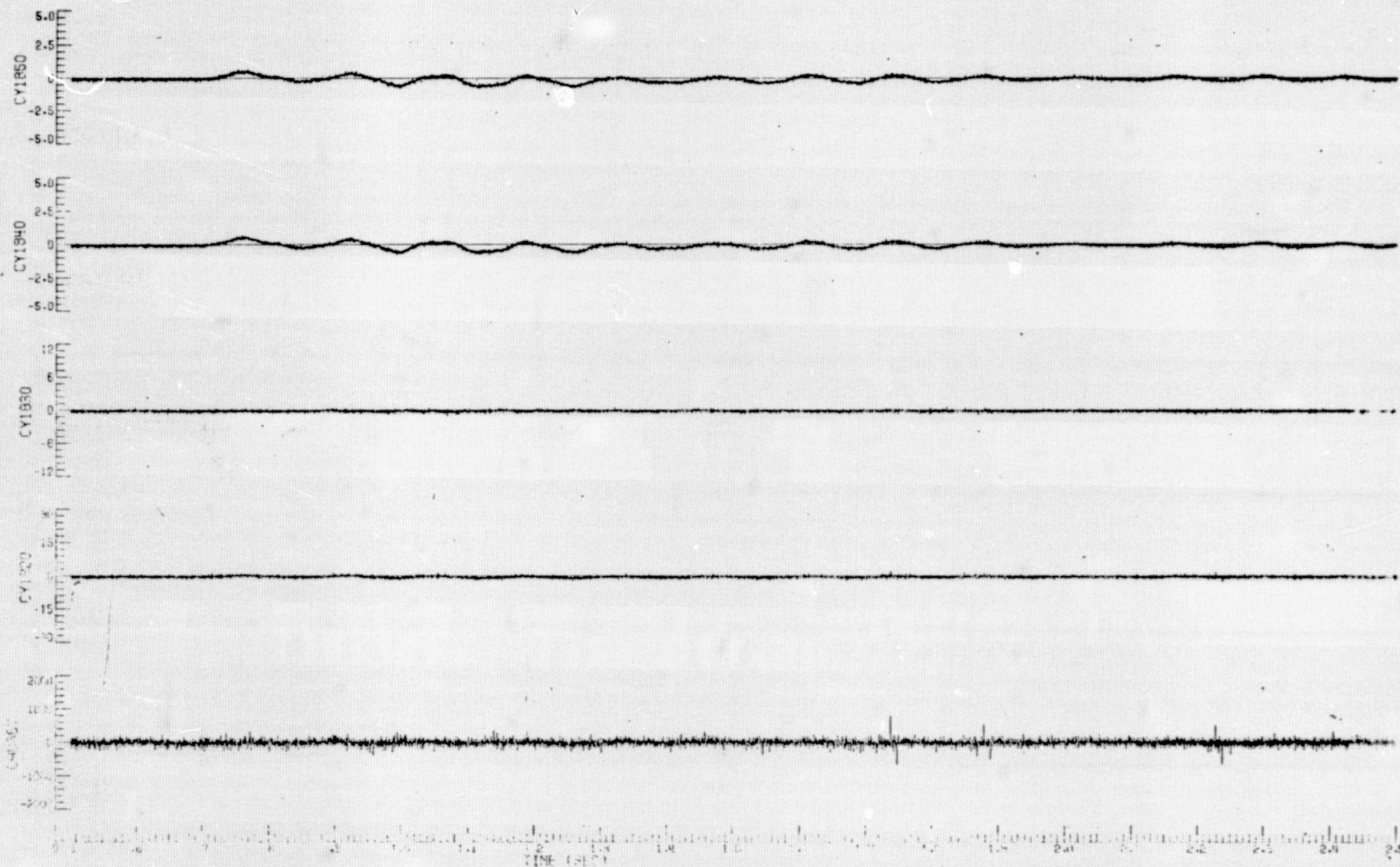
FIGURE 112. TC-3 MAX Q - /Bus Accelerations - T + 32 - T + 41.5 - 1024 sps



O = 18:40:40 = 67240 sec.

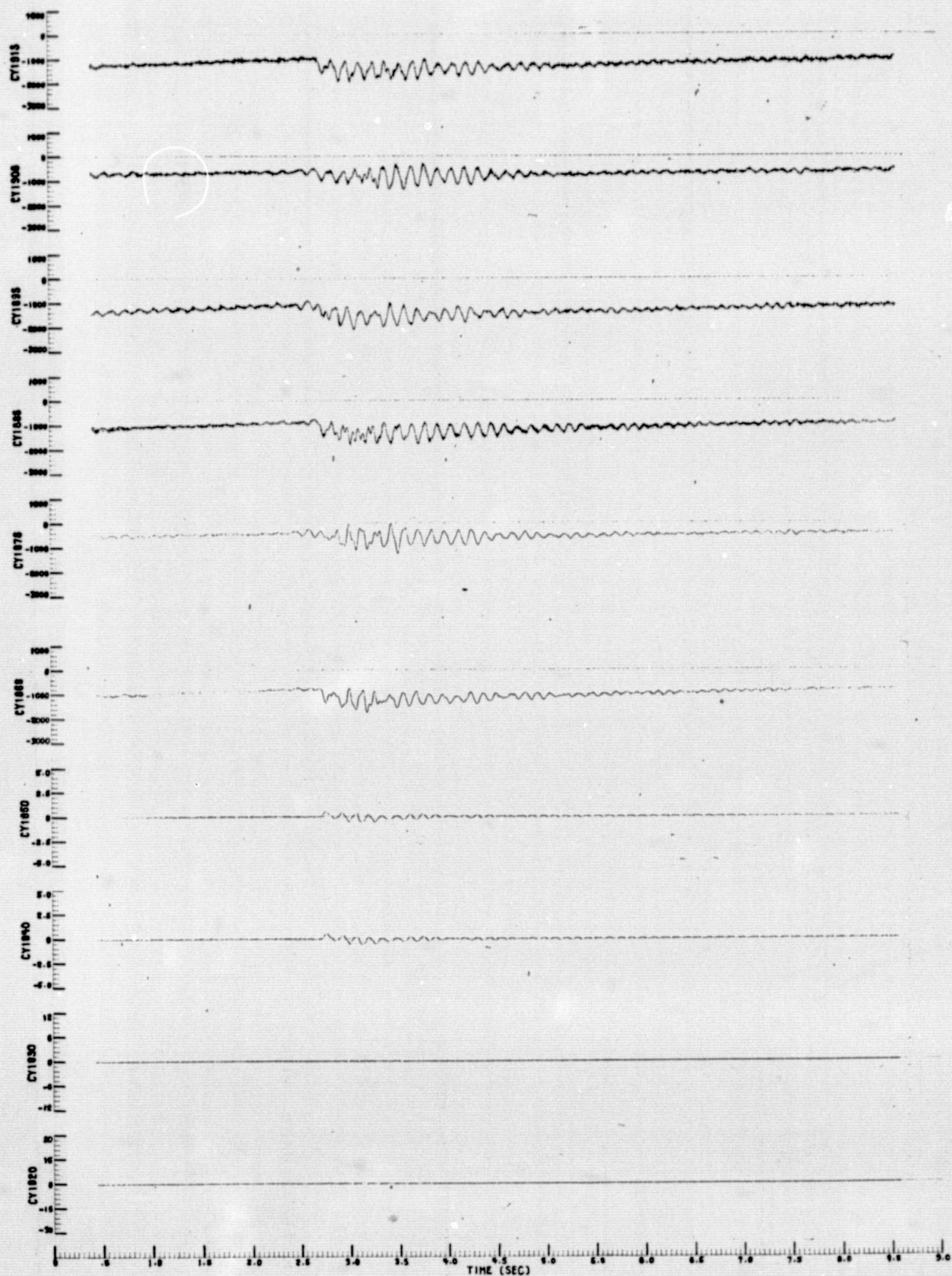
FIGURE 114. TC-3 FBR Release - Vib & Mic - 4096 sps

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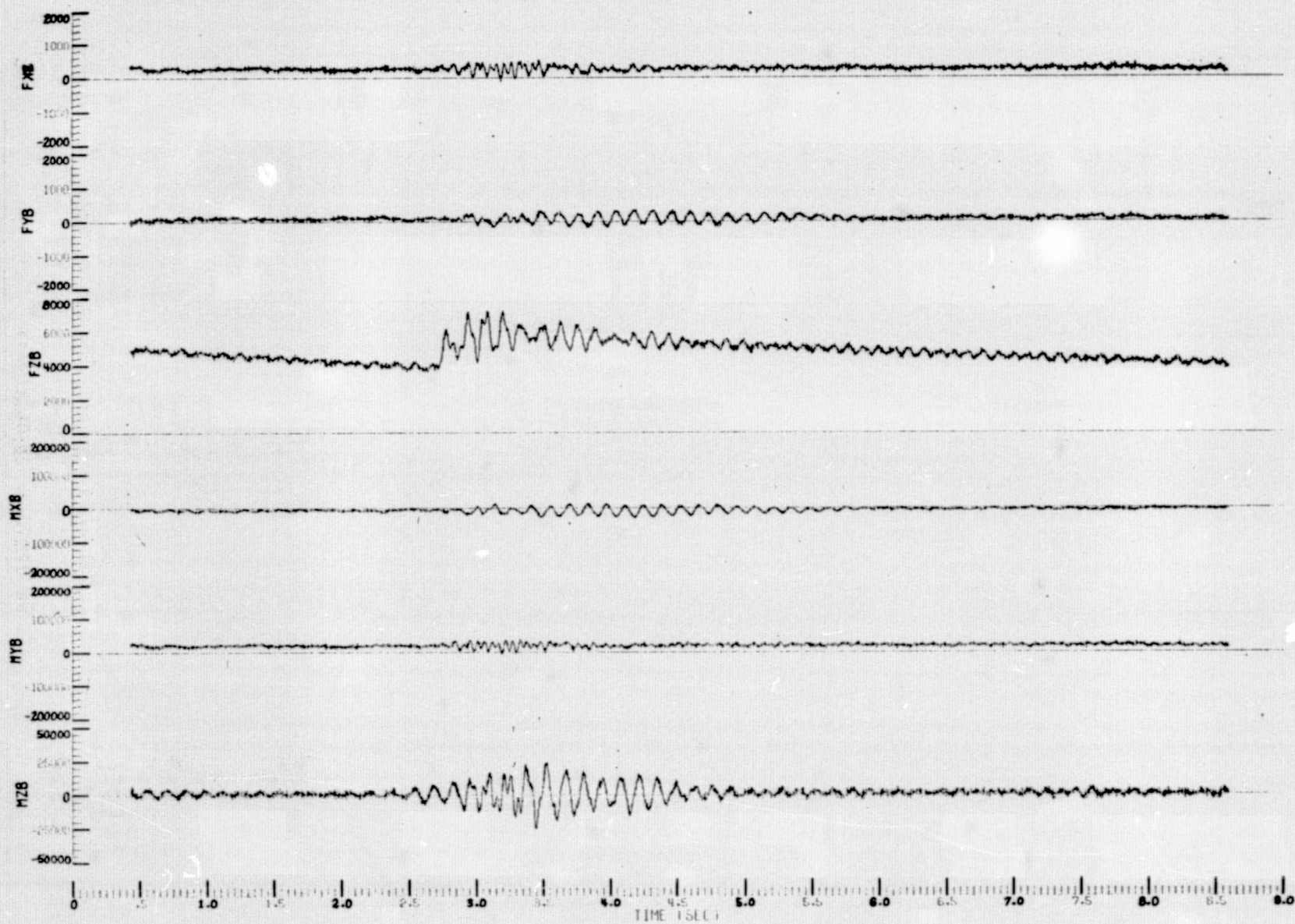
O = 18:40:51 = 67251 sec.

FIGURE 115. TC-3 Stage 1 Ignition - Vib - 4096 sps



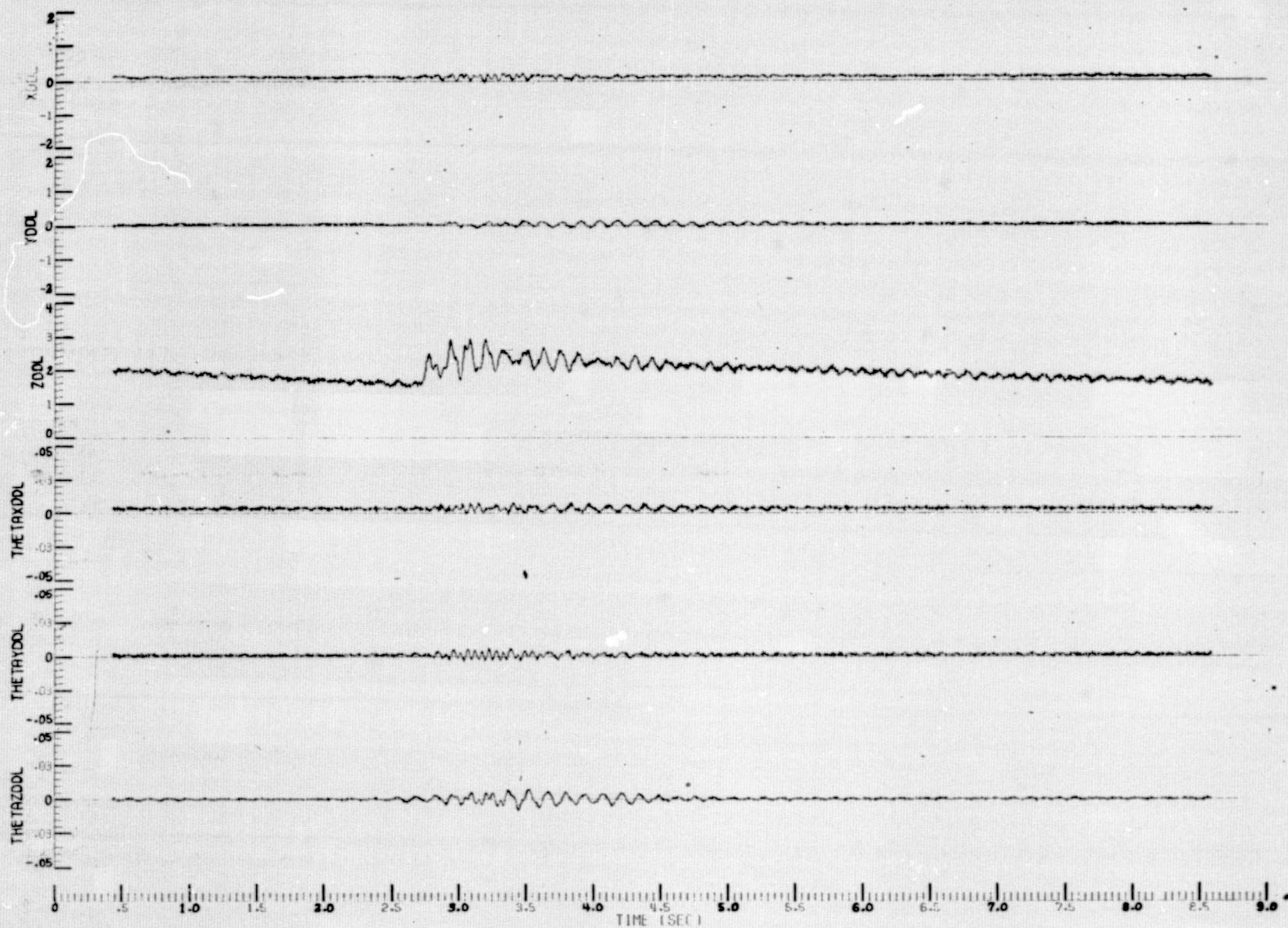
O = 18:40:49 = 67249 sec.

FIGURE 116. TC-3 Stage 1 Ignition - Strain & Vib - 1024 sps



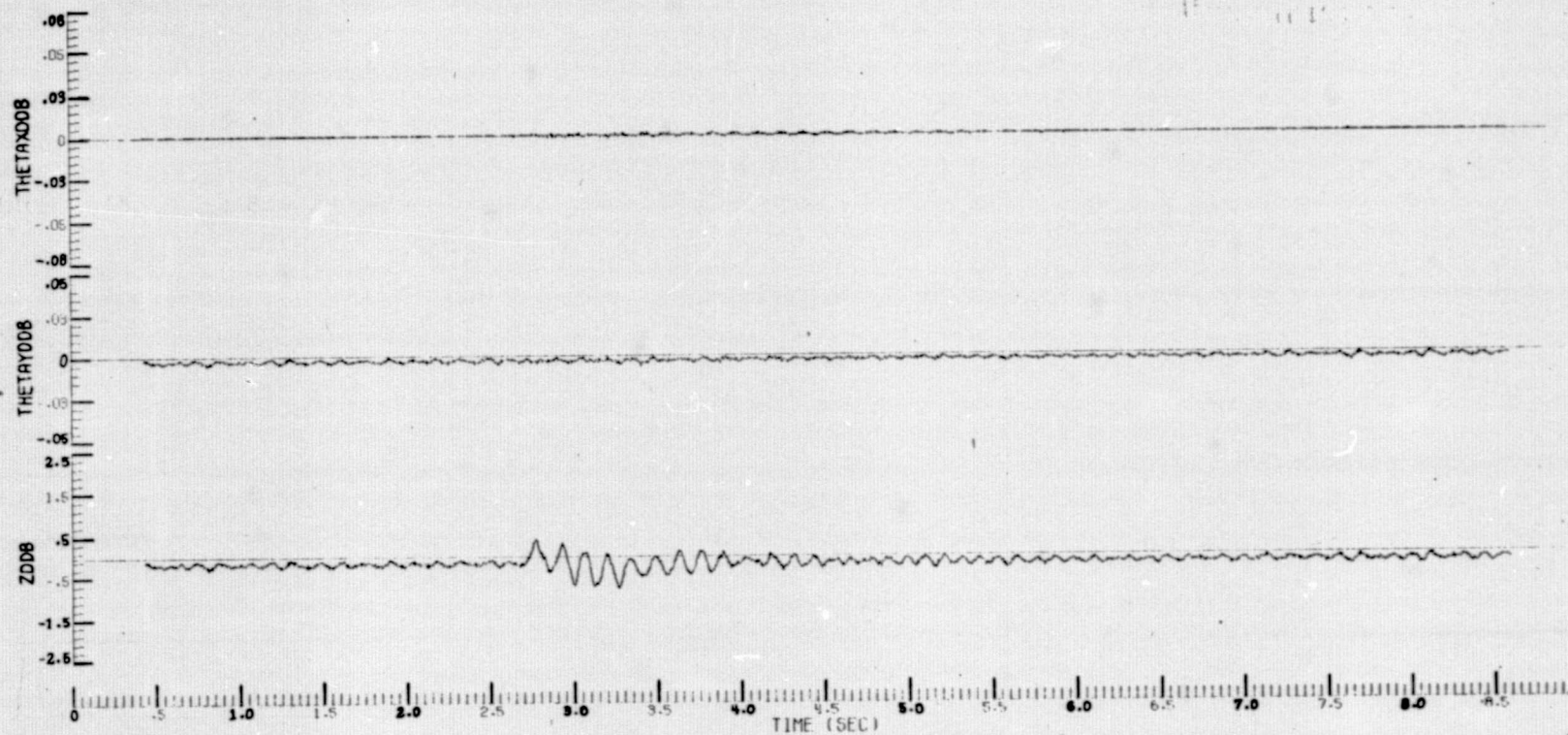
O = 18:40:49 = 67249 sec.

FIGURE 117. TC-3 Stage 1 Ignition - Forces & Moment - 1024 sps



O = 18:40:49 = 67249 sec.

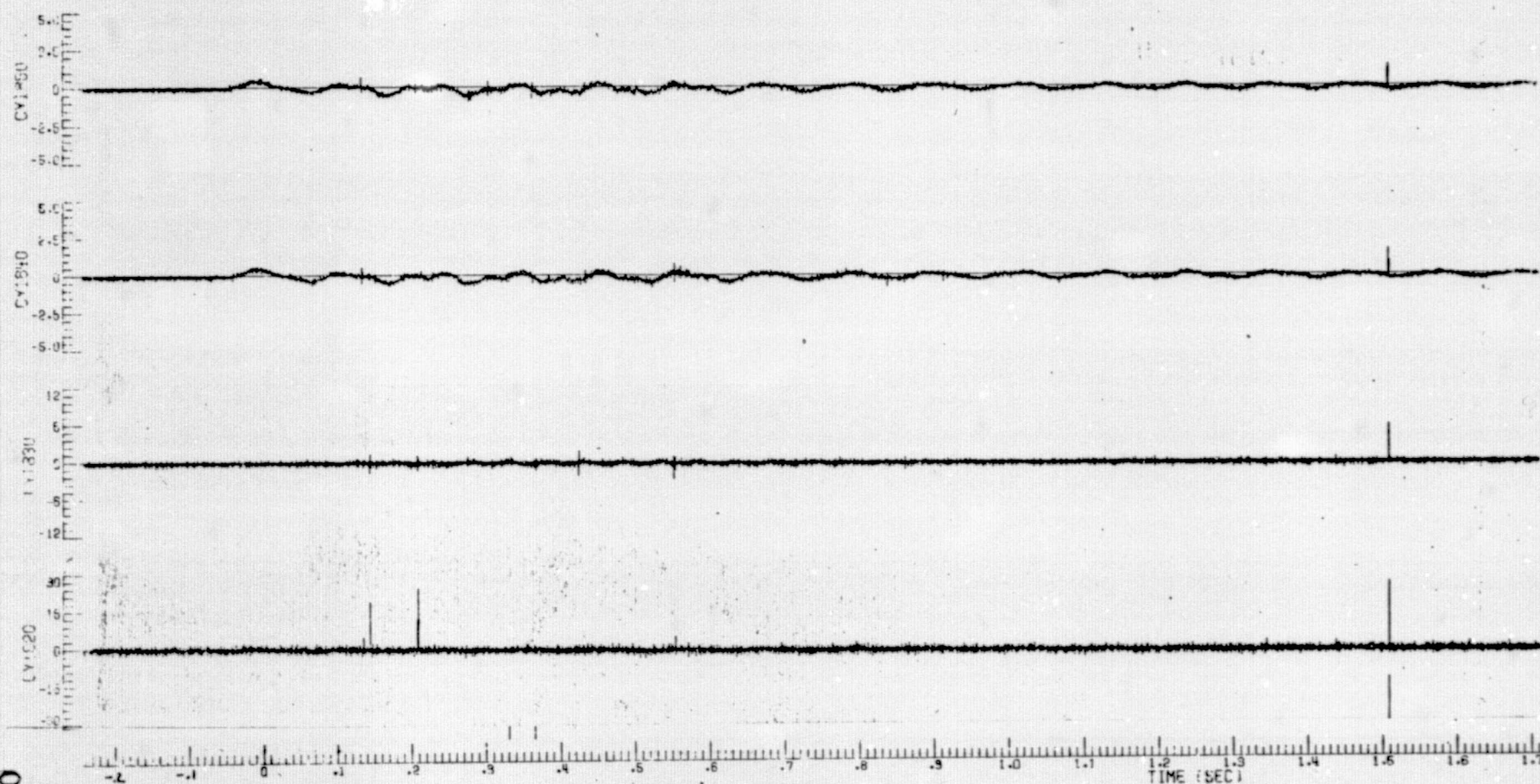
FIGURE 118. TC-3 Stage 1 Ignition - VLC cg Acceleration - 1024 sps



O = 18:40:49 = 67249 sec.

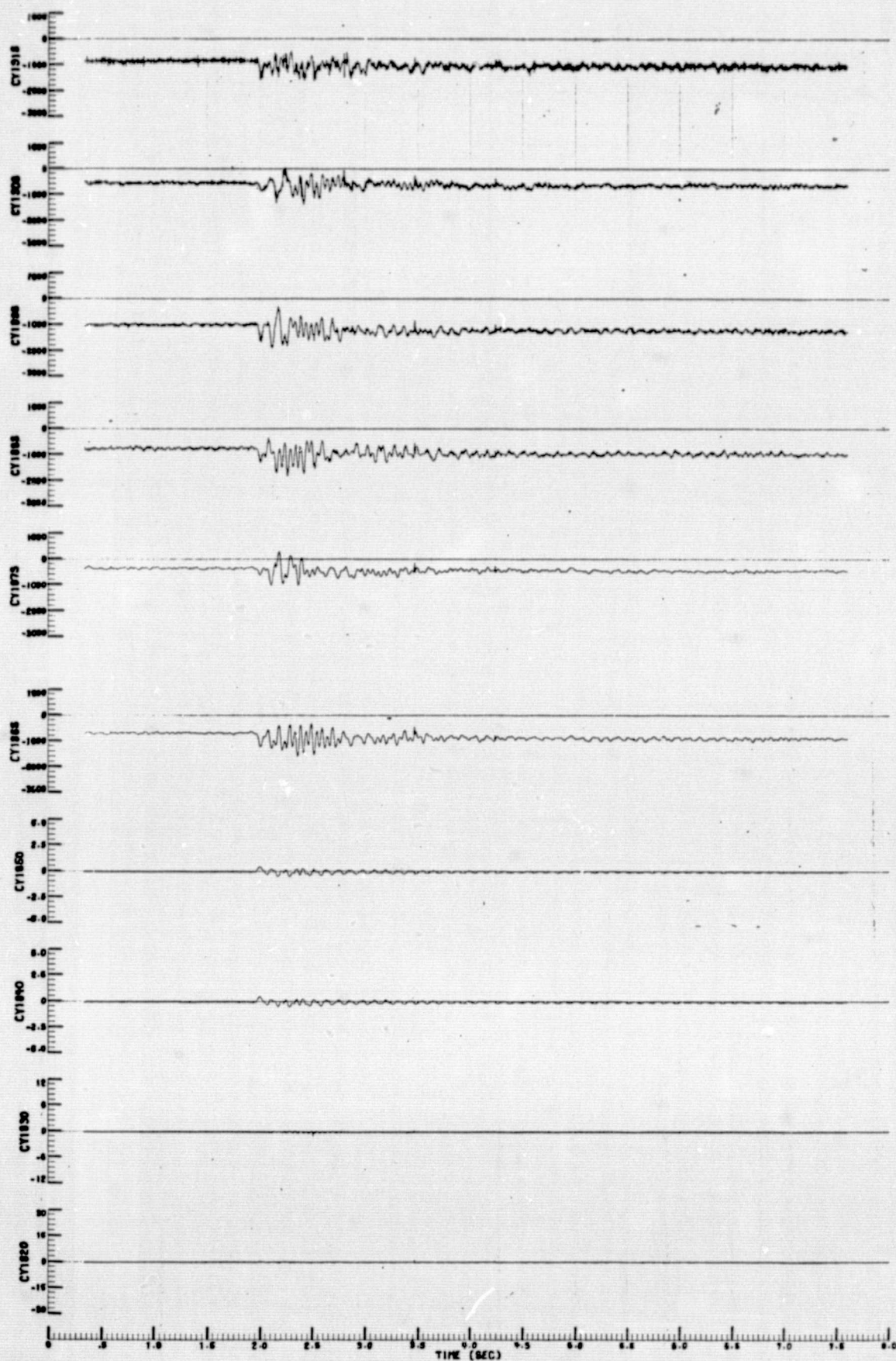
FIGURE 119. TC-3 Stage 1 Ignition - Bus Acceleration - 1024 sps

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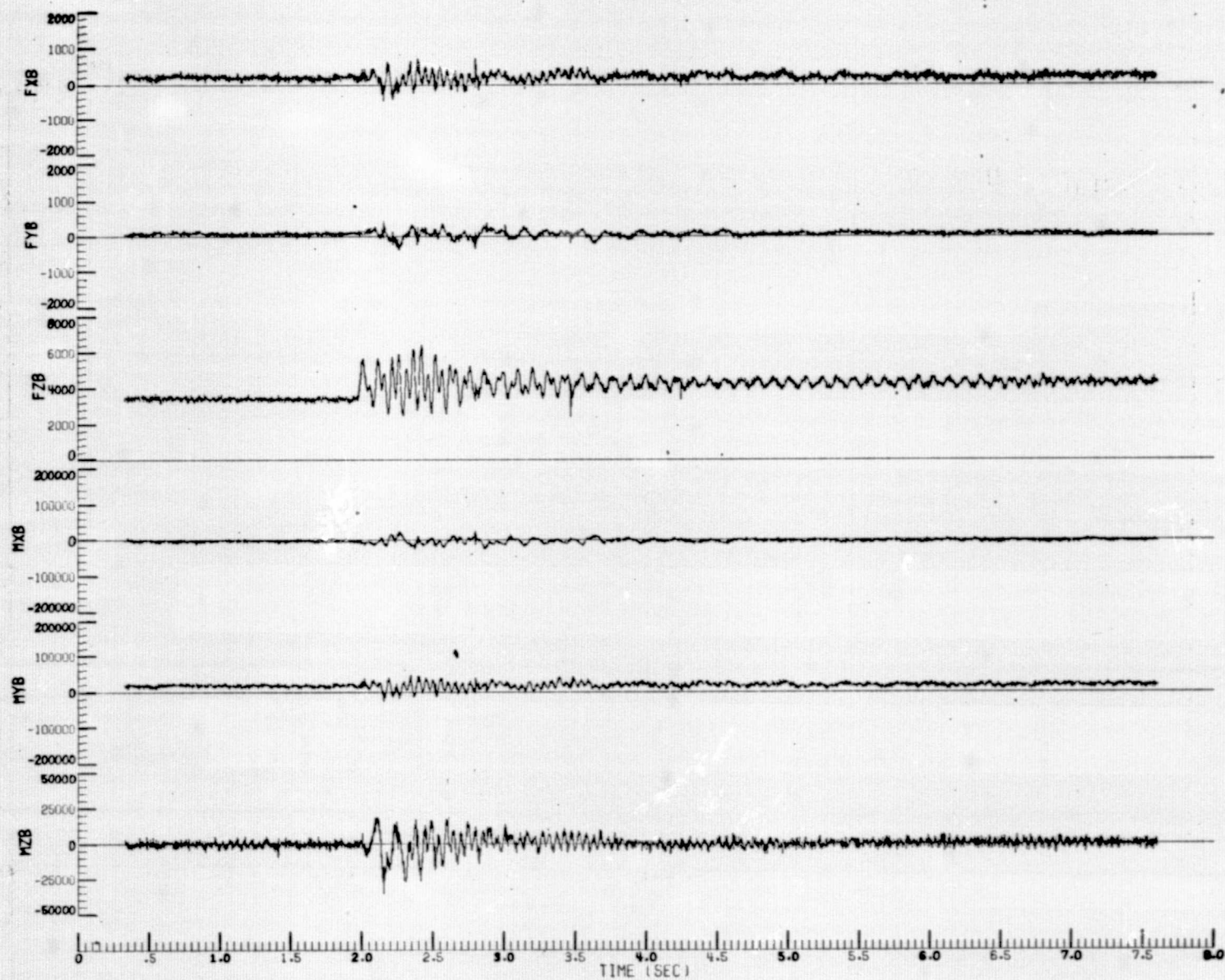
O = 18:41:03 = 67263 sec.

FIGURE 120. TC-3 Jettison SRM - Vibration Sensors - 4096 sps



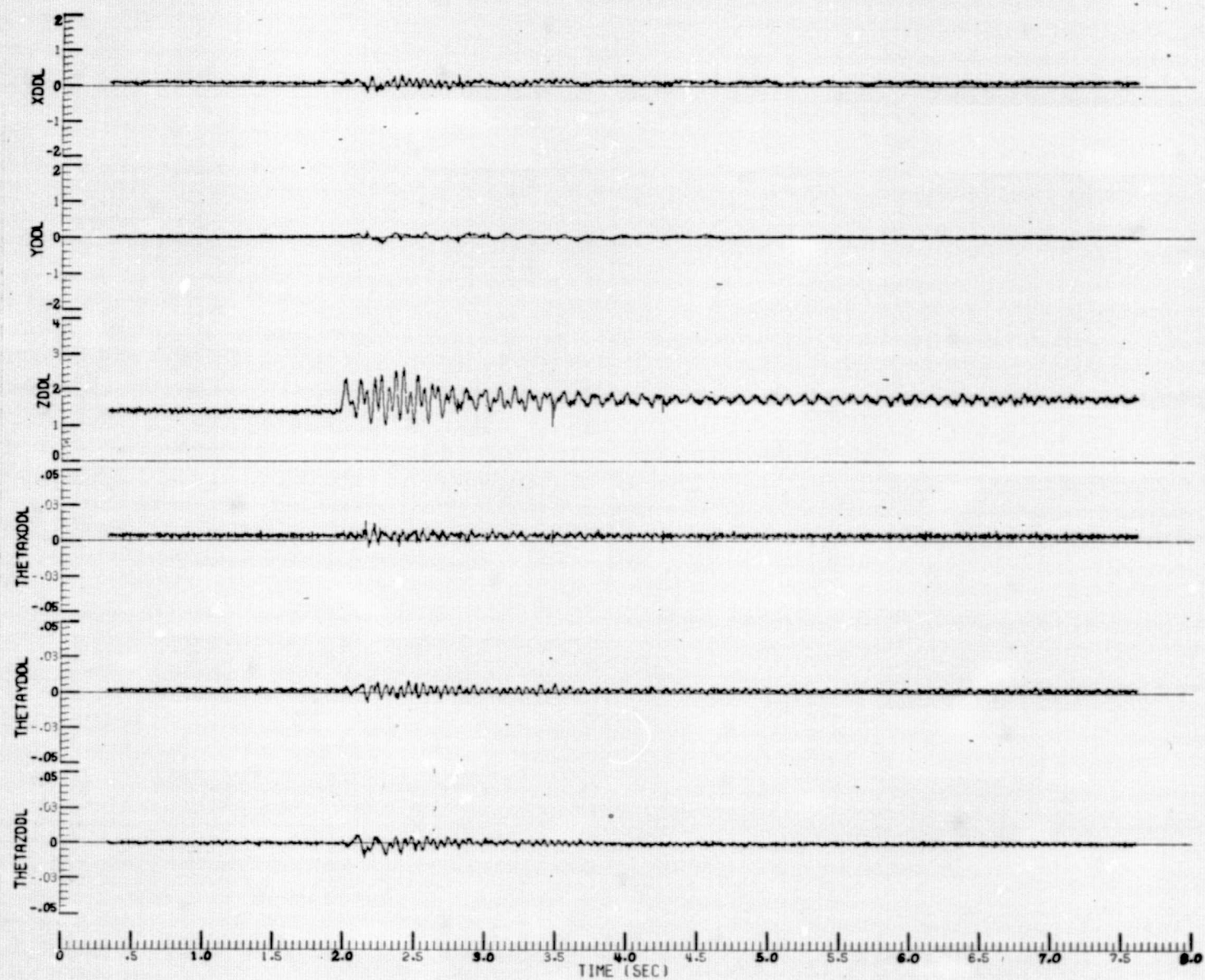
O = 18:41:01 = 67261 sec.

FIGURE 121. TC-3 Jettison SRM - Strain & Vib - 1024 sps



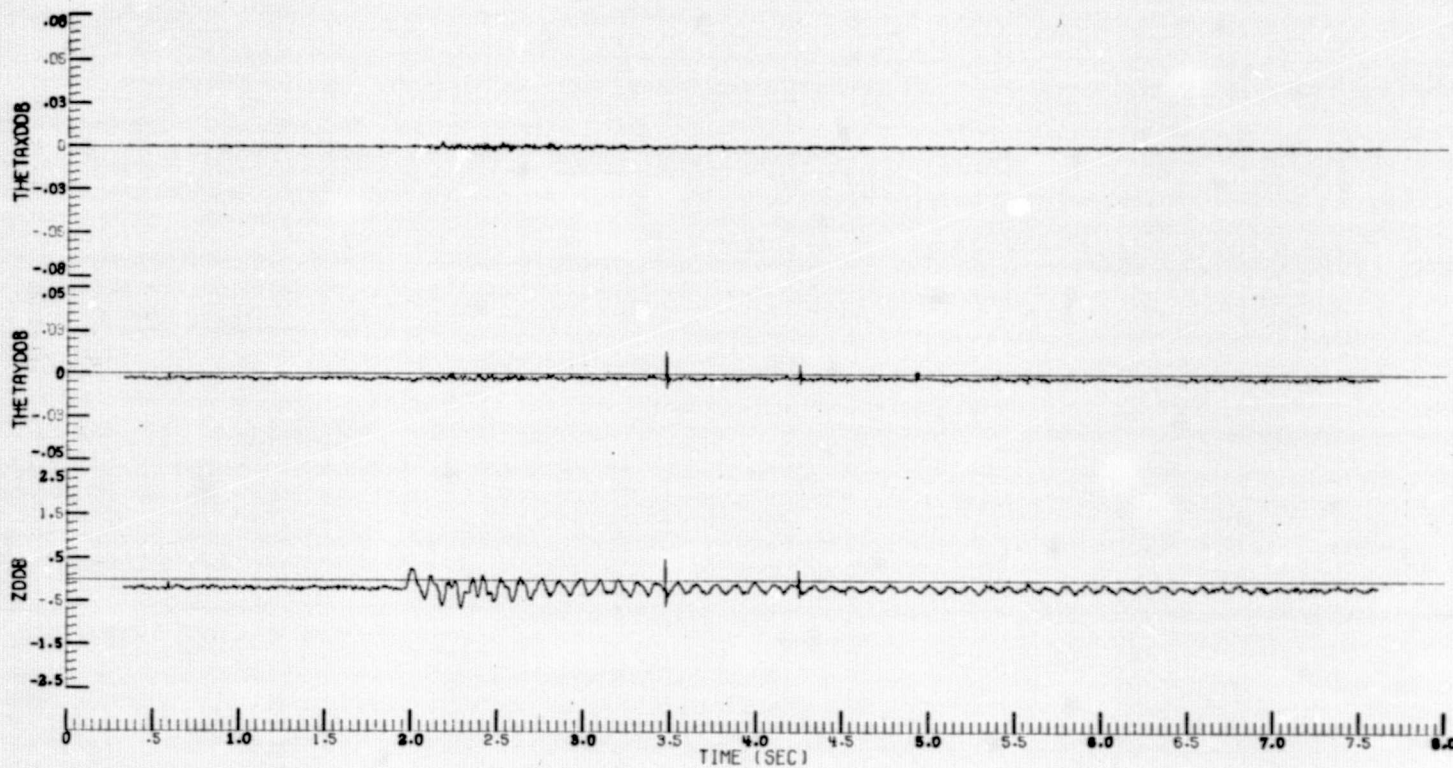
O = 18:41:01 = 67261 sec.

FIGURE 122. TC-3 Jettison SRM - Forces & Moments - 1024 sps



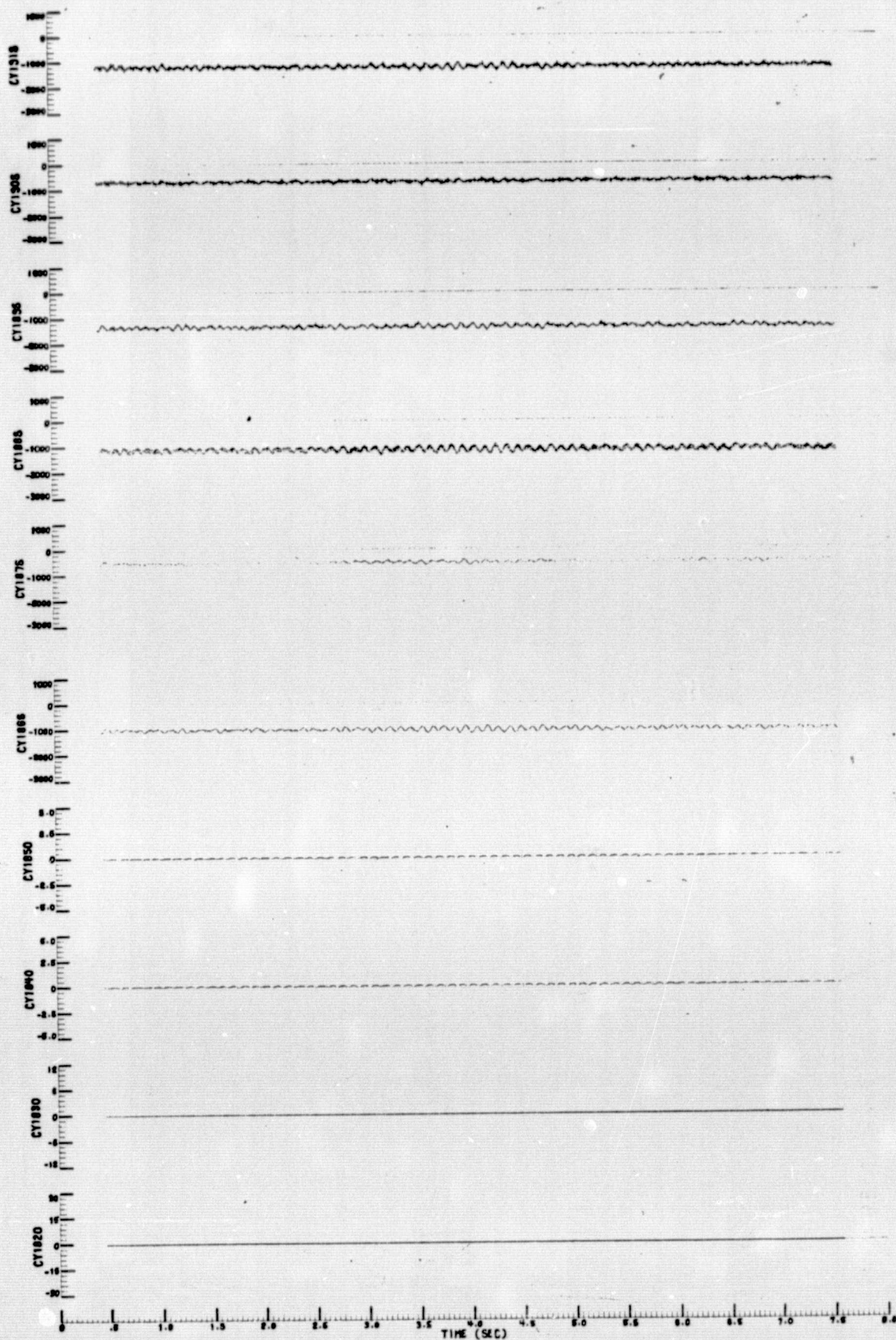
O = 18:41:01 = 67261 sec.

FIGURE 123. TC-3 Jettison SRM - VLC cg Accelerations - 1024 sps



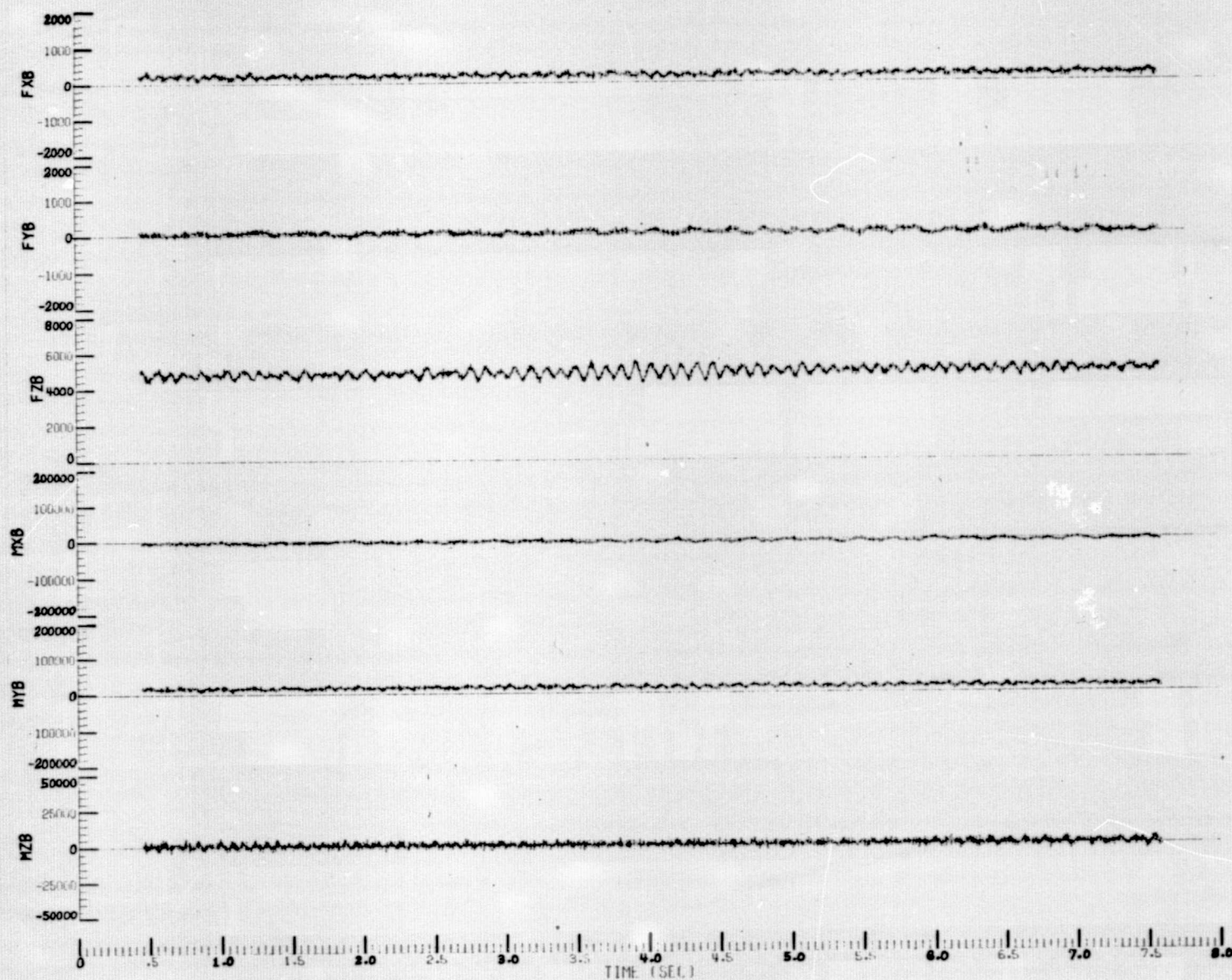
O = 18:41:01 = 67261 sec.

FIGURE 124. TC-3 Jettison SRM - Bus Accelerations - 1024 sps



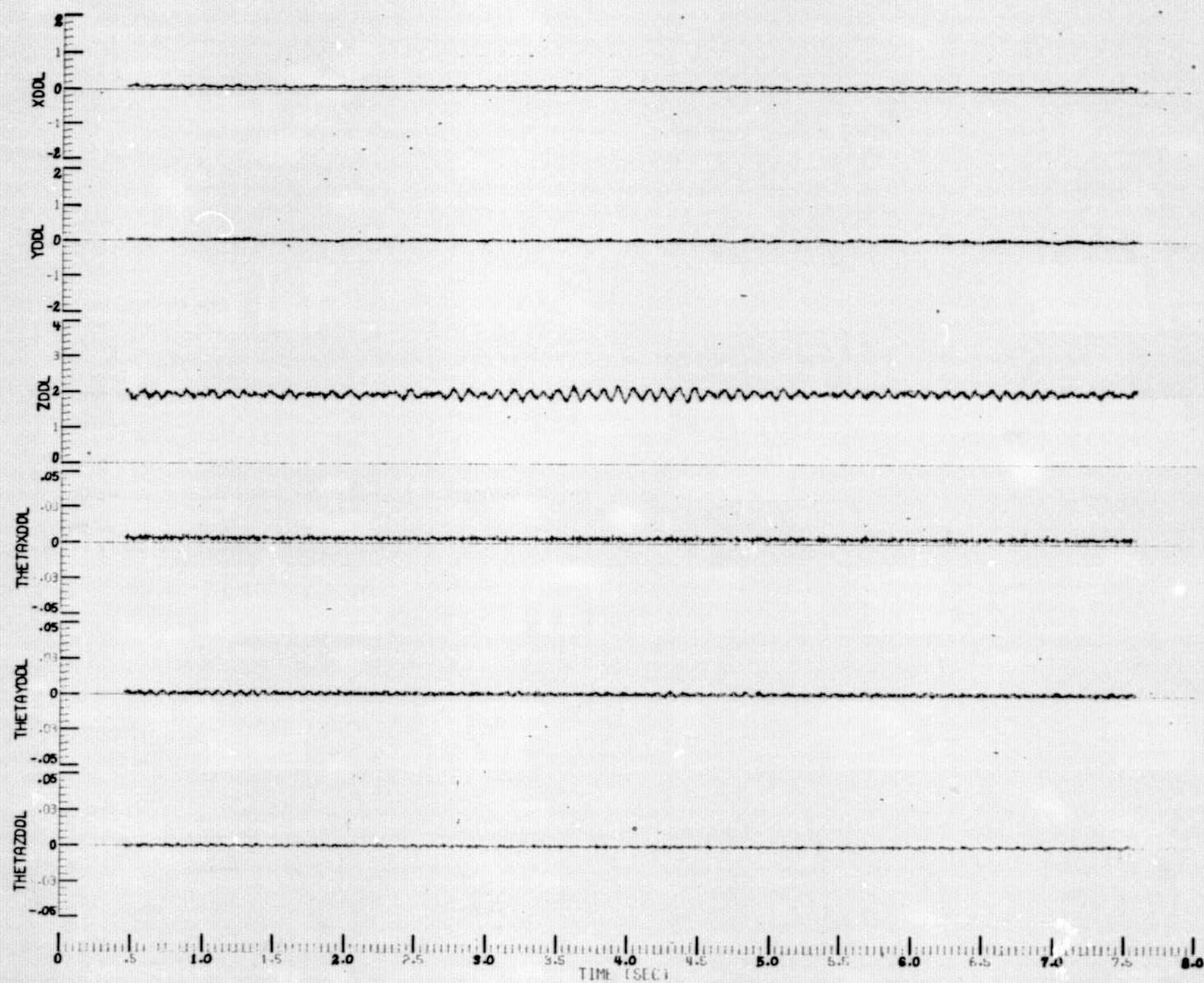
O = 18:41:35 = 67295 sec.

FIGURE 125. TC-3 FLMN-1, Strain & Vib T + 155.5 - T + 163 - 1024 sps



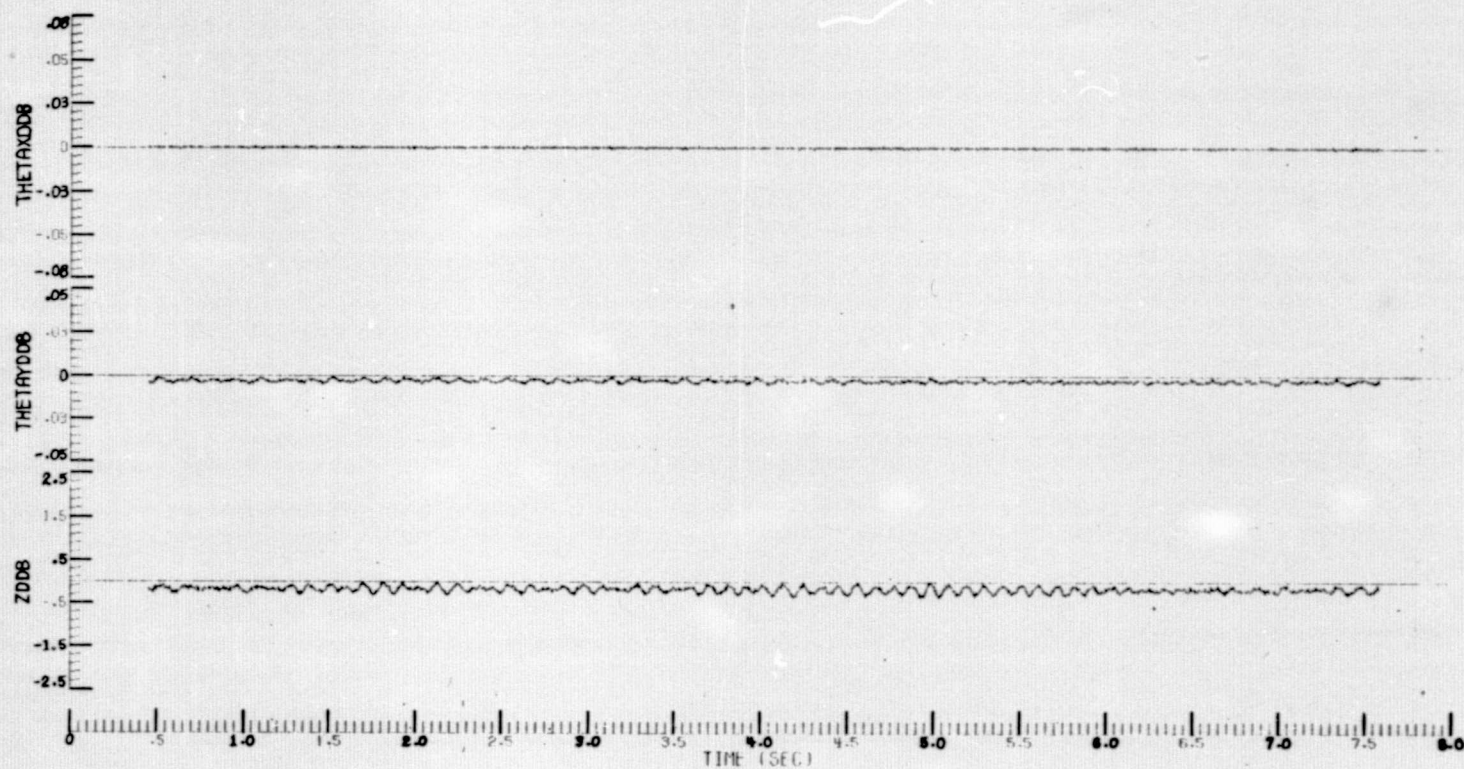
O = 18:41:35 = 67295 sec.

FIGURE 126. TC-3 FLMN-1, Forces & Moments - T + 155.5 - T + 163 - 1024 sps



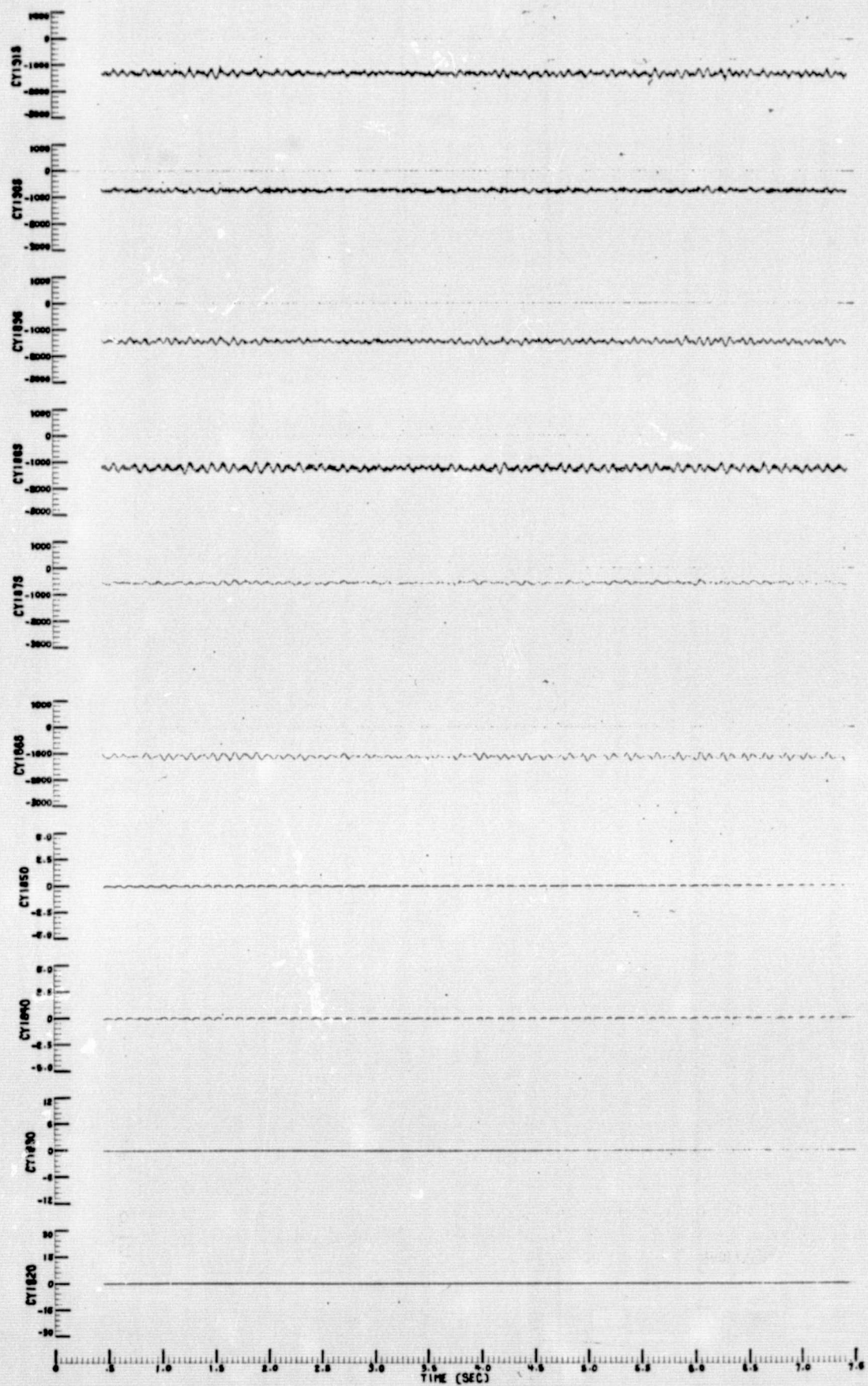
O = 18:41:35 = 67295 sec.

FIGURE 127. TC-3 FLMN 1 - VLC cg Accel - T + 155.5 - T + 163 - 1024 sps



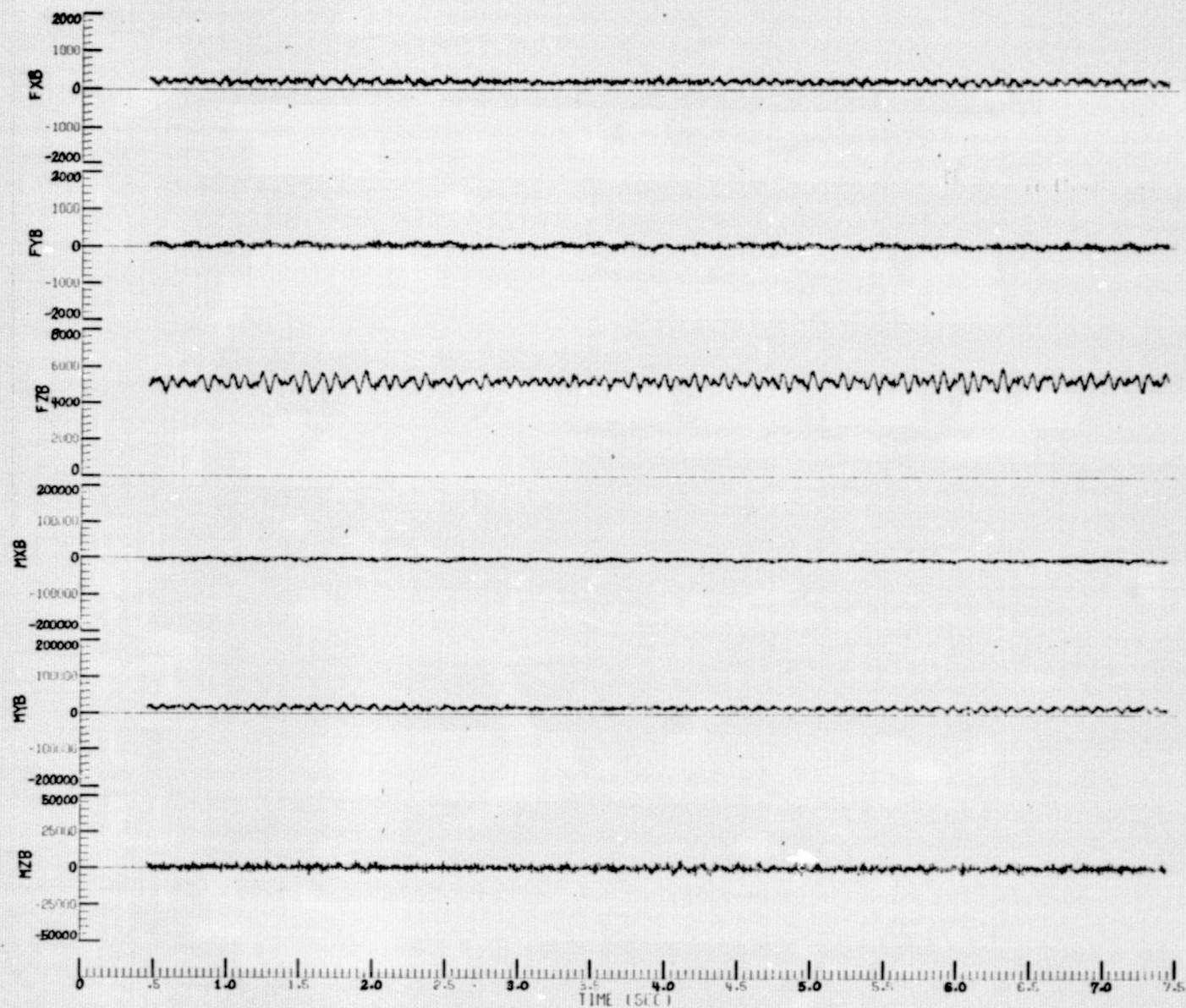
O = 18:41:35 = 67295 sec.

FIGURE 128. TC-3 FLMN 1 - Bus Accelerations - T + 155.5 - T + 163 - 1024 sps



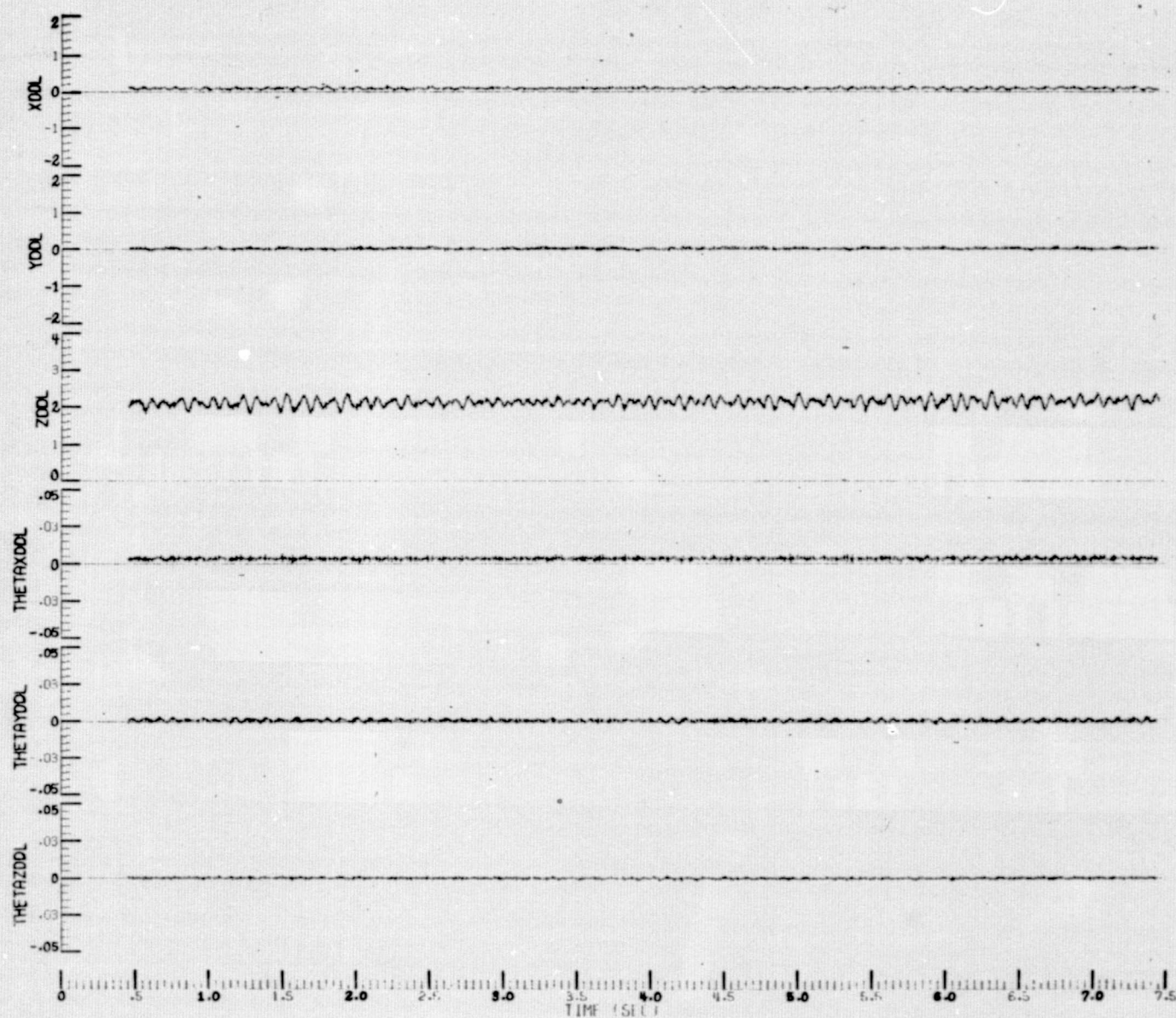
O = 18:41:50 = 67310 sec.

FIGURE 129. TC-3 FLMN 2, Strain & Vib - T + 170.5 - T + 177.5 - 1024 sps



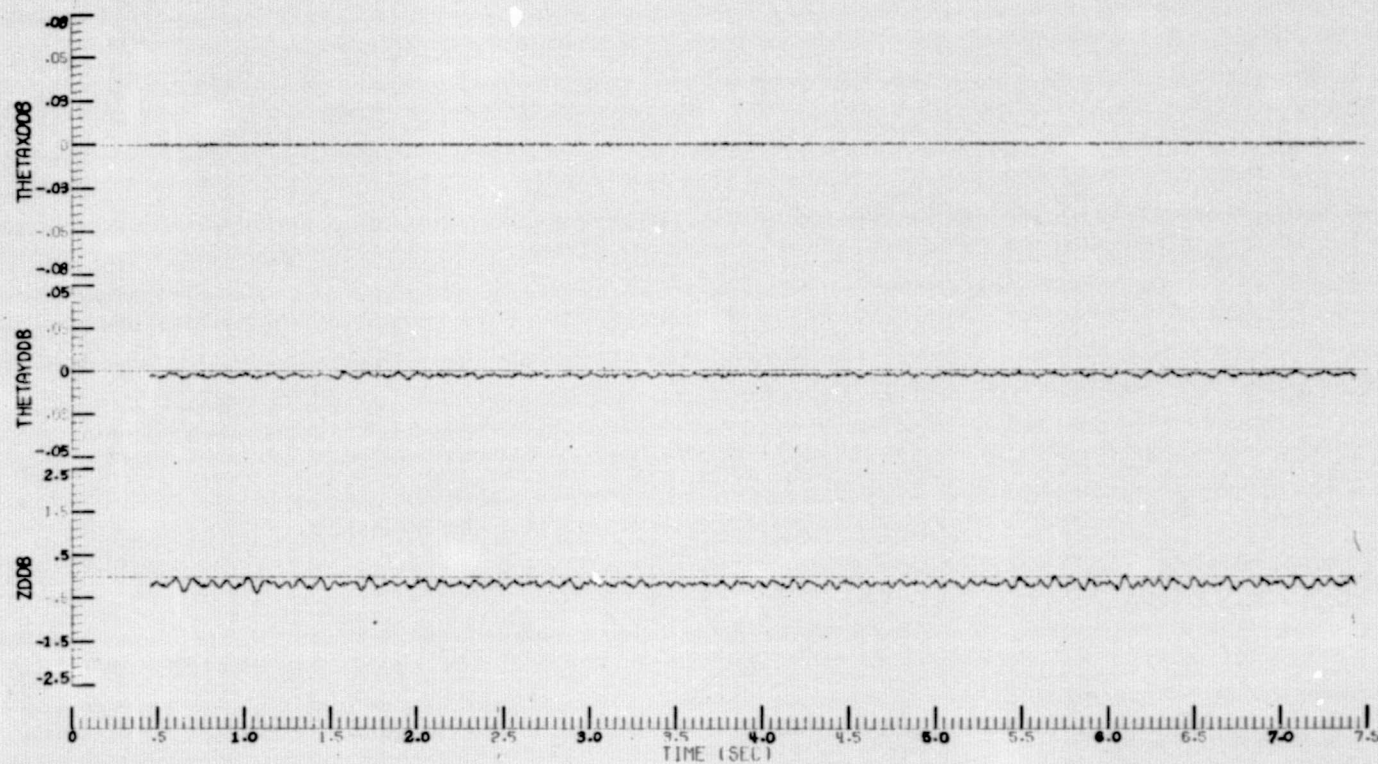
O = 18:41:50 = 67310 sec.

FIGURE 130. TC-3 FLMN 2 - Forces & Moments - T + 170.5 - T + 177.5 1024 sps



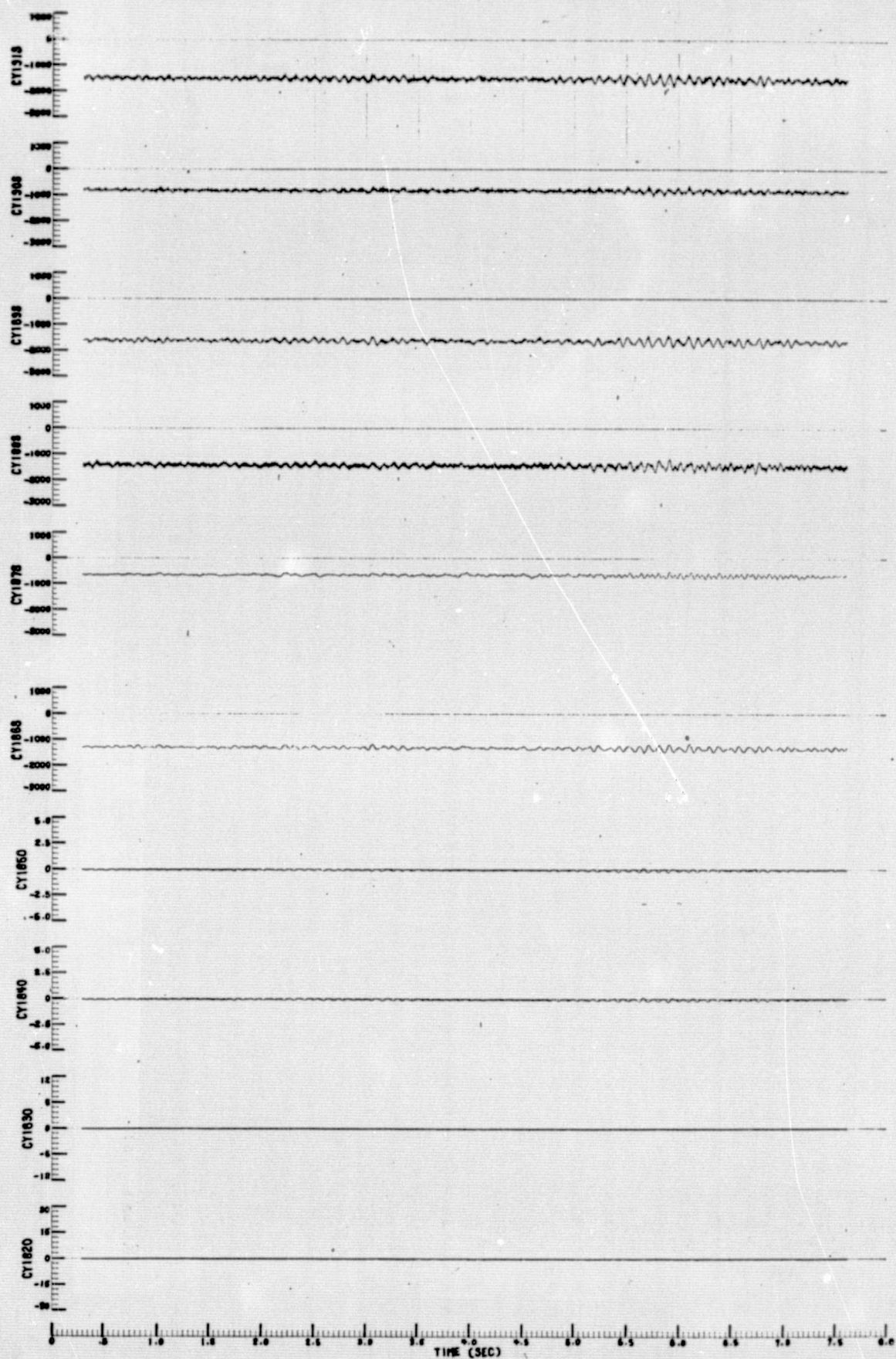
O = 18:41:50 = 67310 sec.

FIGURE 131. TC-3 FLMN - 2 - VLC cg Acceleration - T + 170.5 - T + 177.5



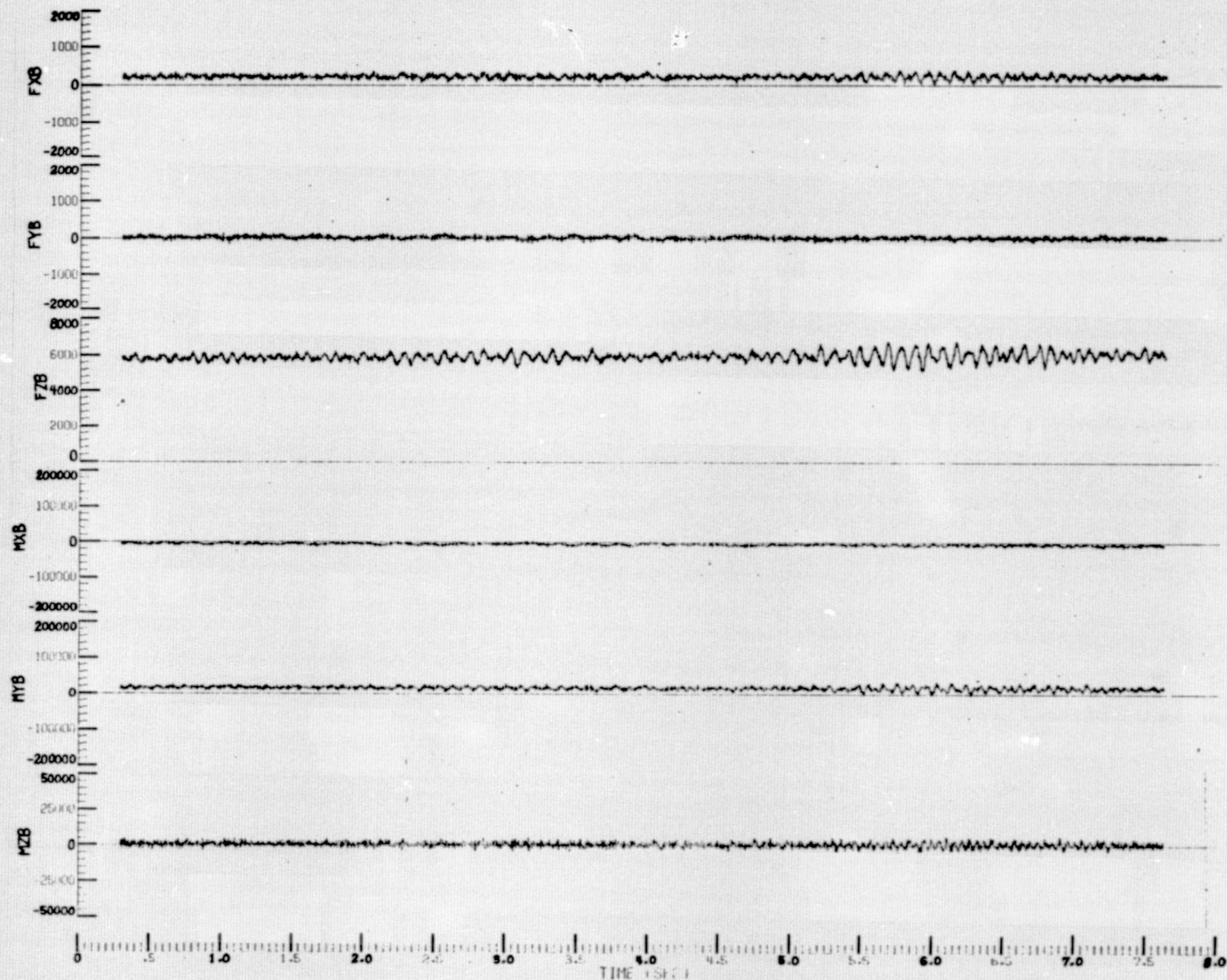
O = 18:41:50 = 67310 sec.

FIGURE 132. TC-3 FLMN 2 - Bus Acceleration - T + 170.5 - T + 177.5 1024 sps



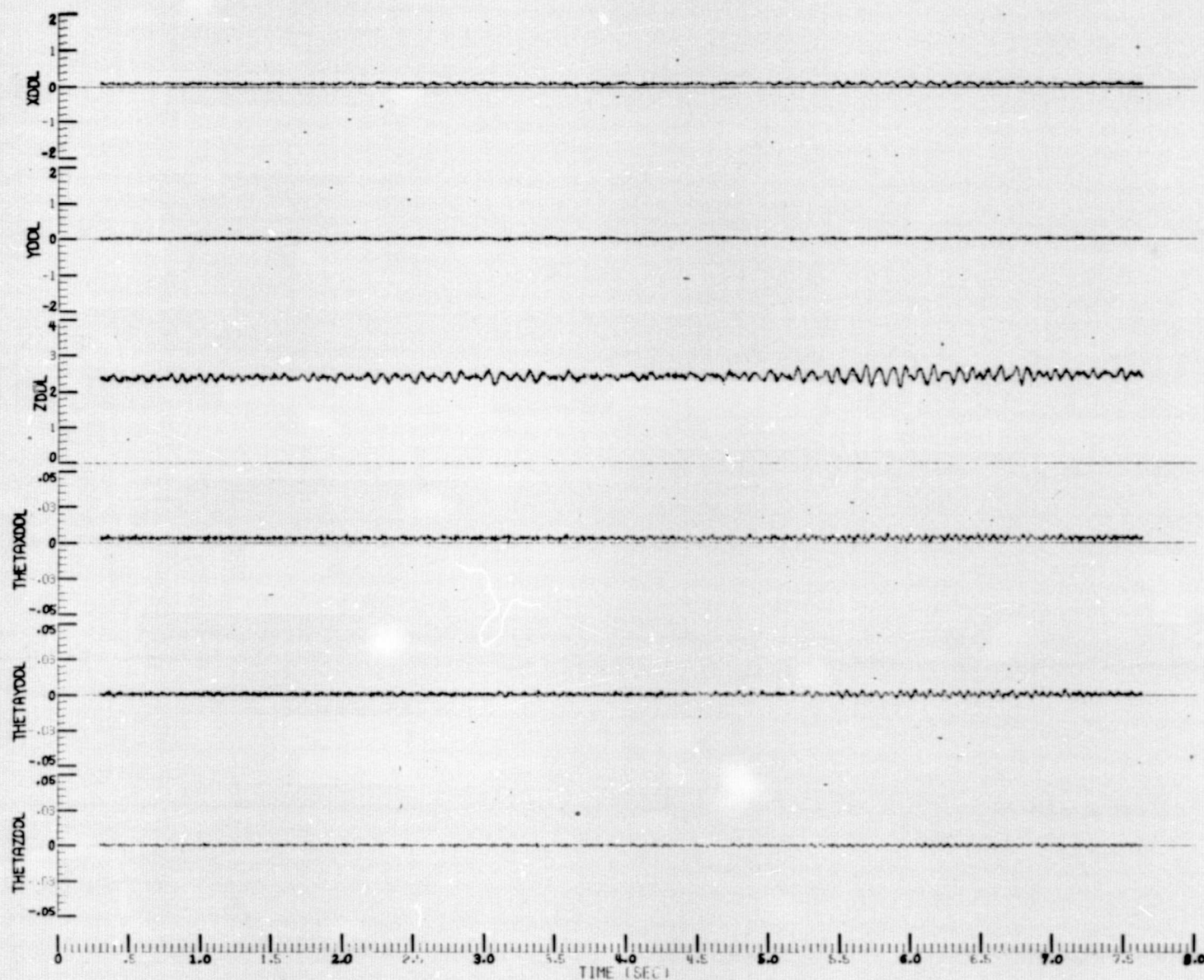
O = 18:42:13 = 67333 sec.

FIGURE 133. TC-3 FLMN 3 - Strain & Vib - T + 193.5 - T + 201 - 1024 sps



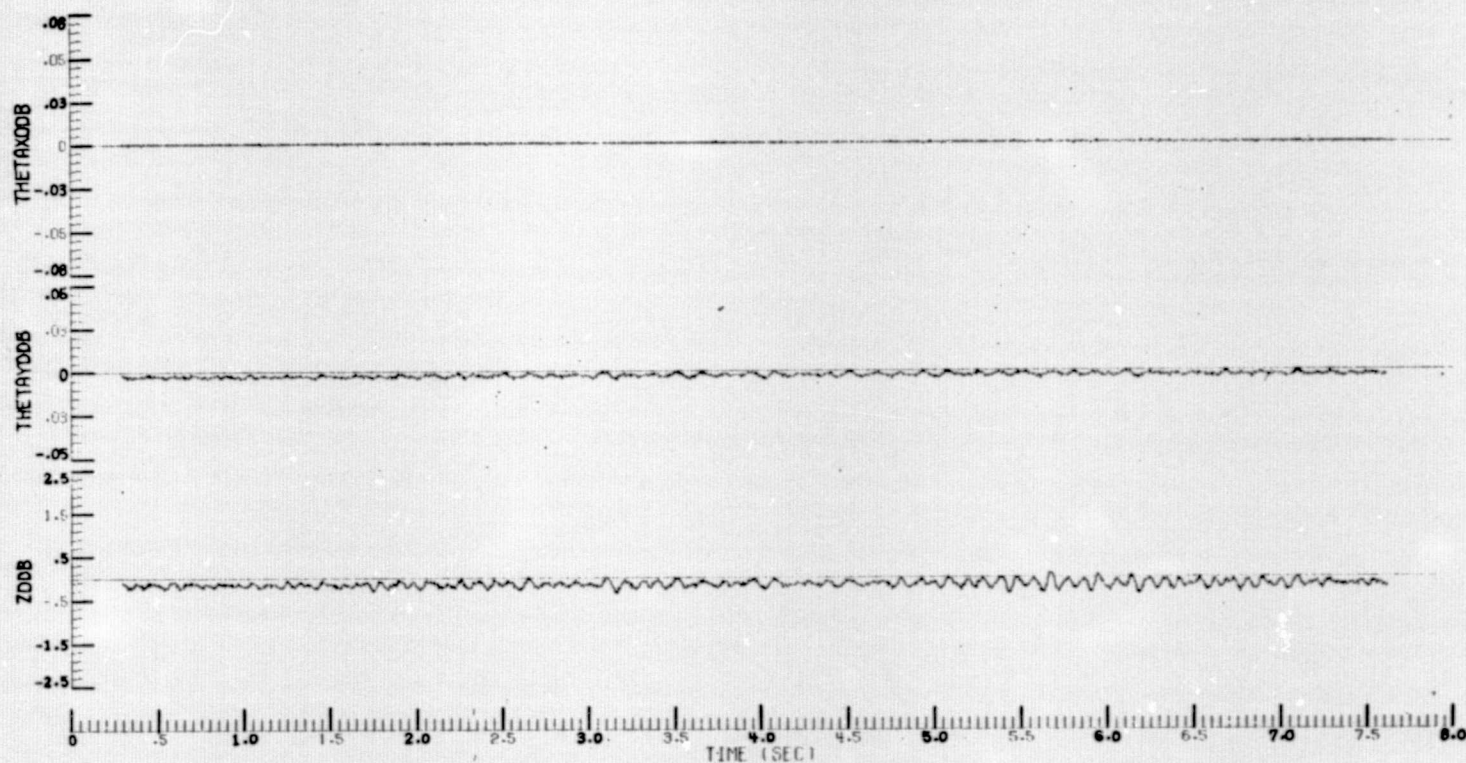
O = 18:42:13 = 67333 sec.

FIGURE 134. TC-3 FLMN 3 - Forces & Moments - T + 195.3 - T + 208 - 1024 sps



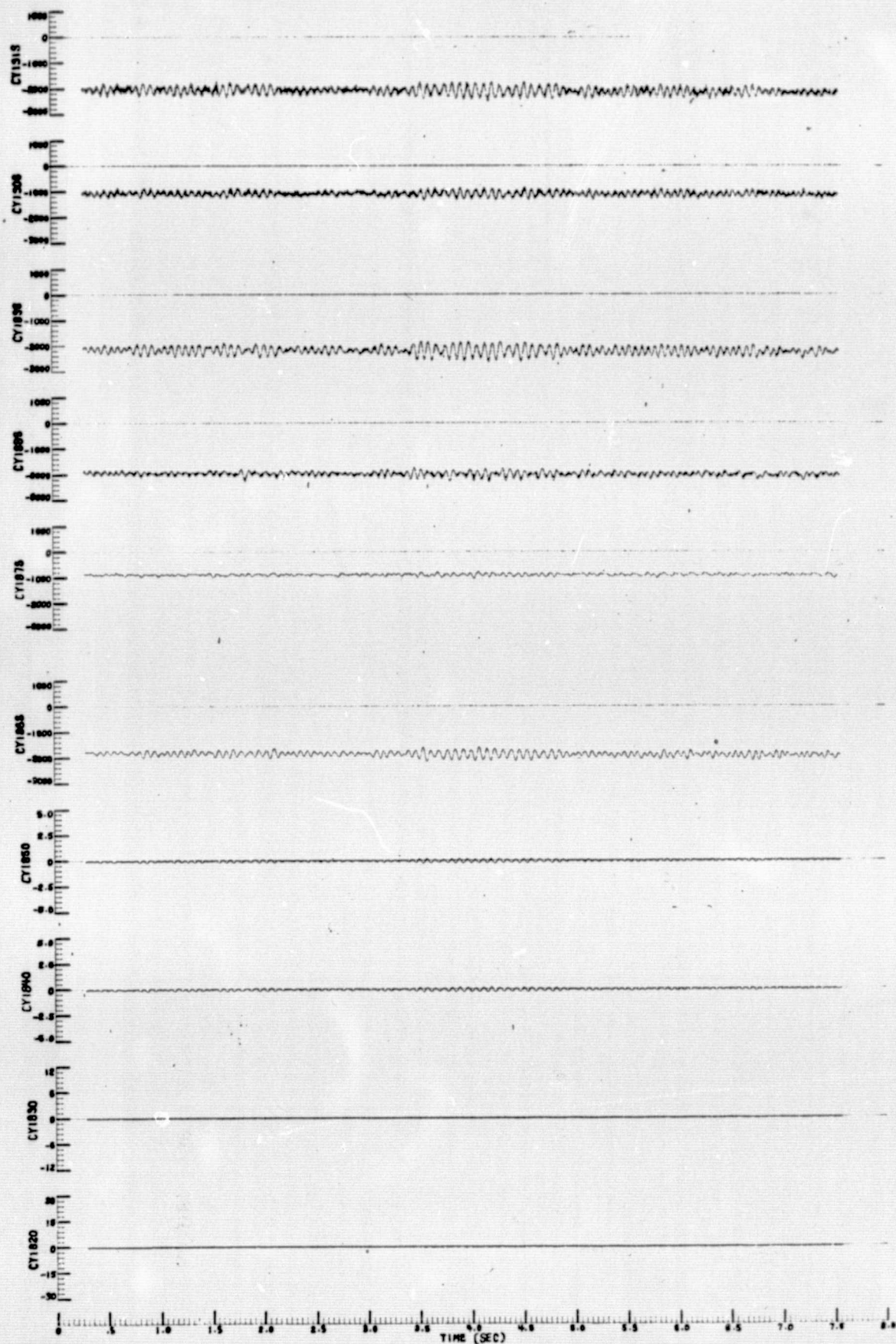
O = 18:42:13 = 67333 sec.

FIGURE 135. TC-3 FLMN 3 - VLC cg Acceleration - T + 193.5 - T + 201 - 1024 sps



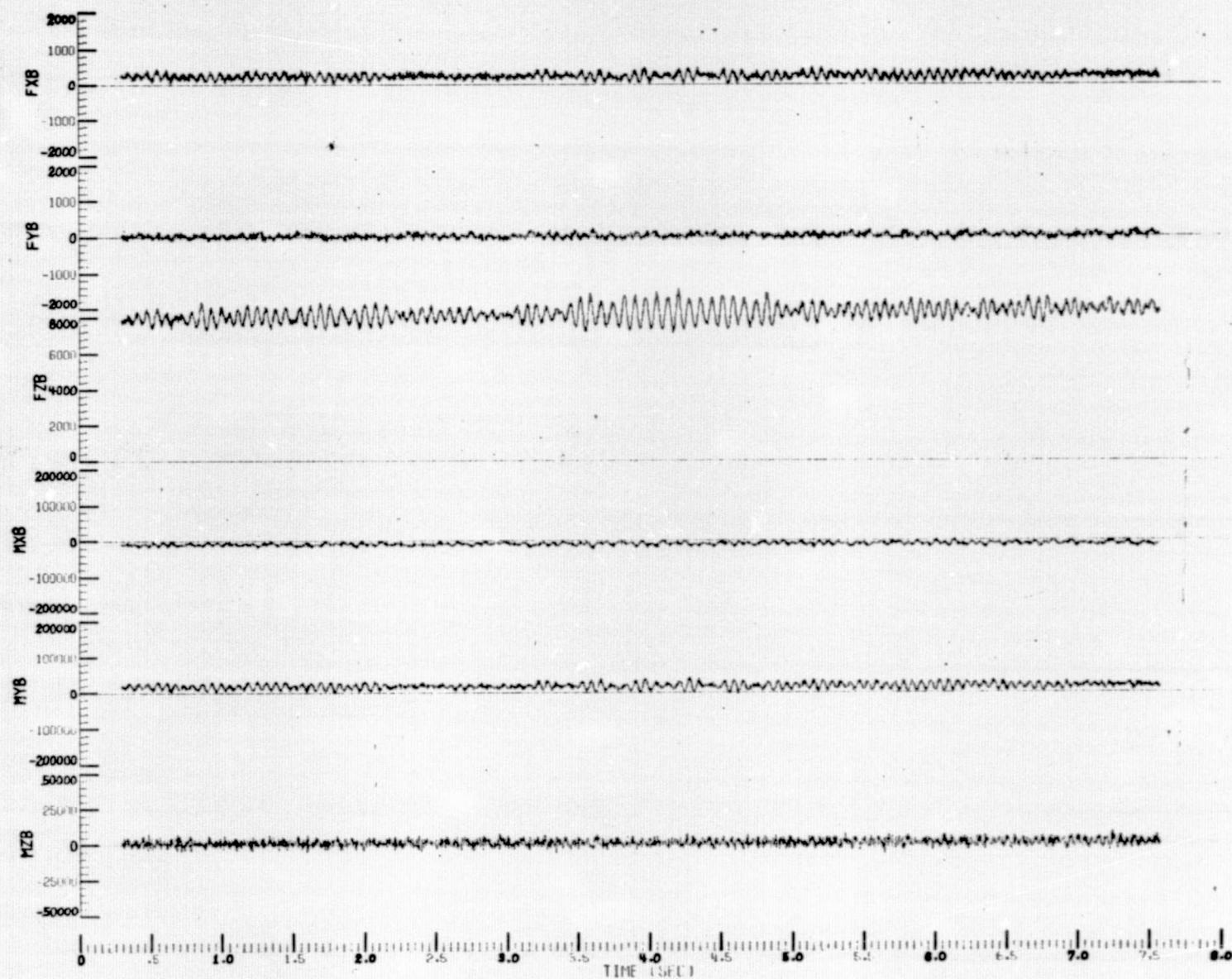
O = 18:42:13 = 67333 sec.

FIGURE 136. TC-3 FLMN 3 - Bus Accelerations - T + 193.5 - T + 201 - 1024 sps



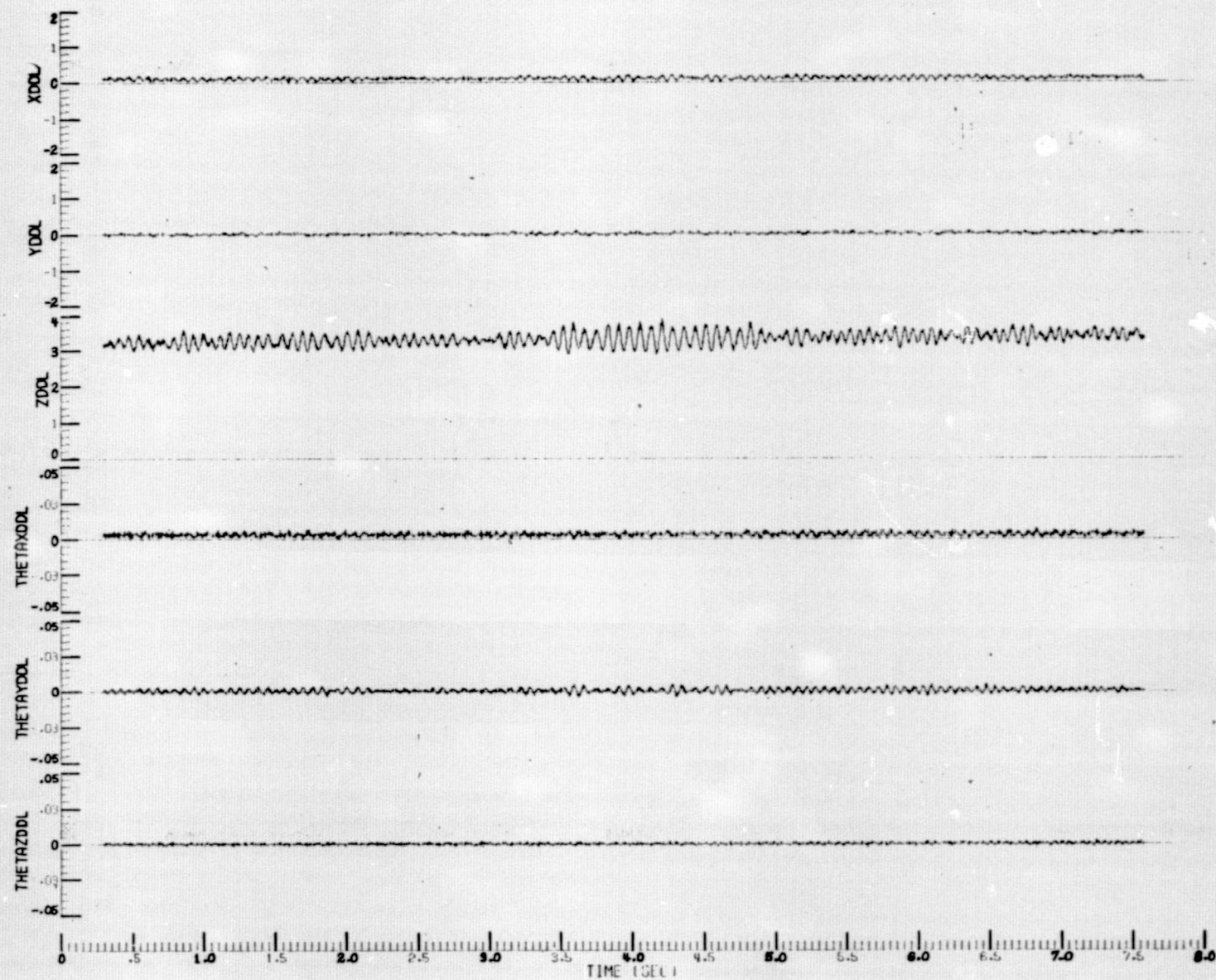
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FIGURE 137. TC-3 FLMN 4 - Strain & Vib - T + 237.5 - T + 245



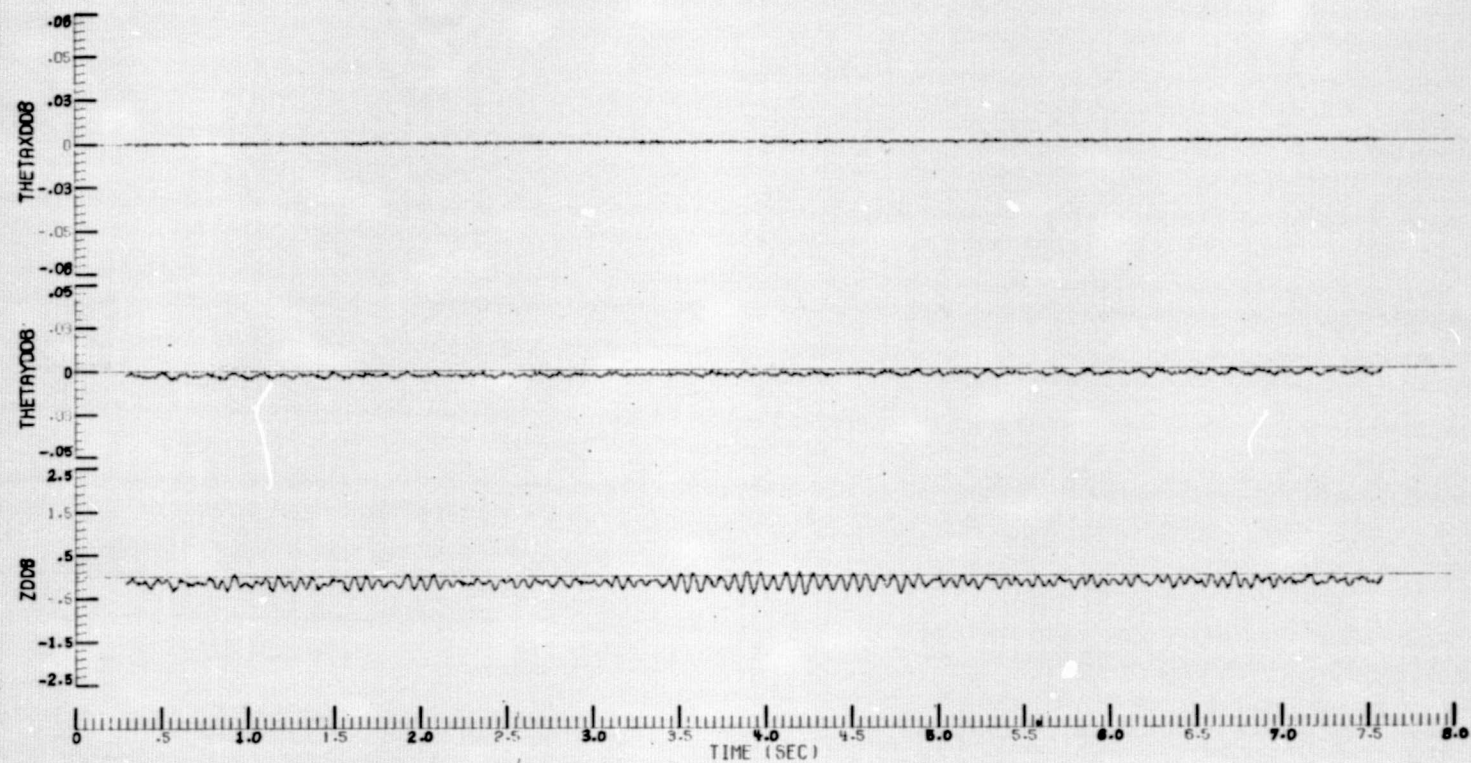
O = 18:42:57 = 67377 sec.

FIGURE 138. TC-3 FLMN 4 Forces & Moments - T + 237.5 - T + 245 - 1024 sps



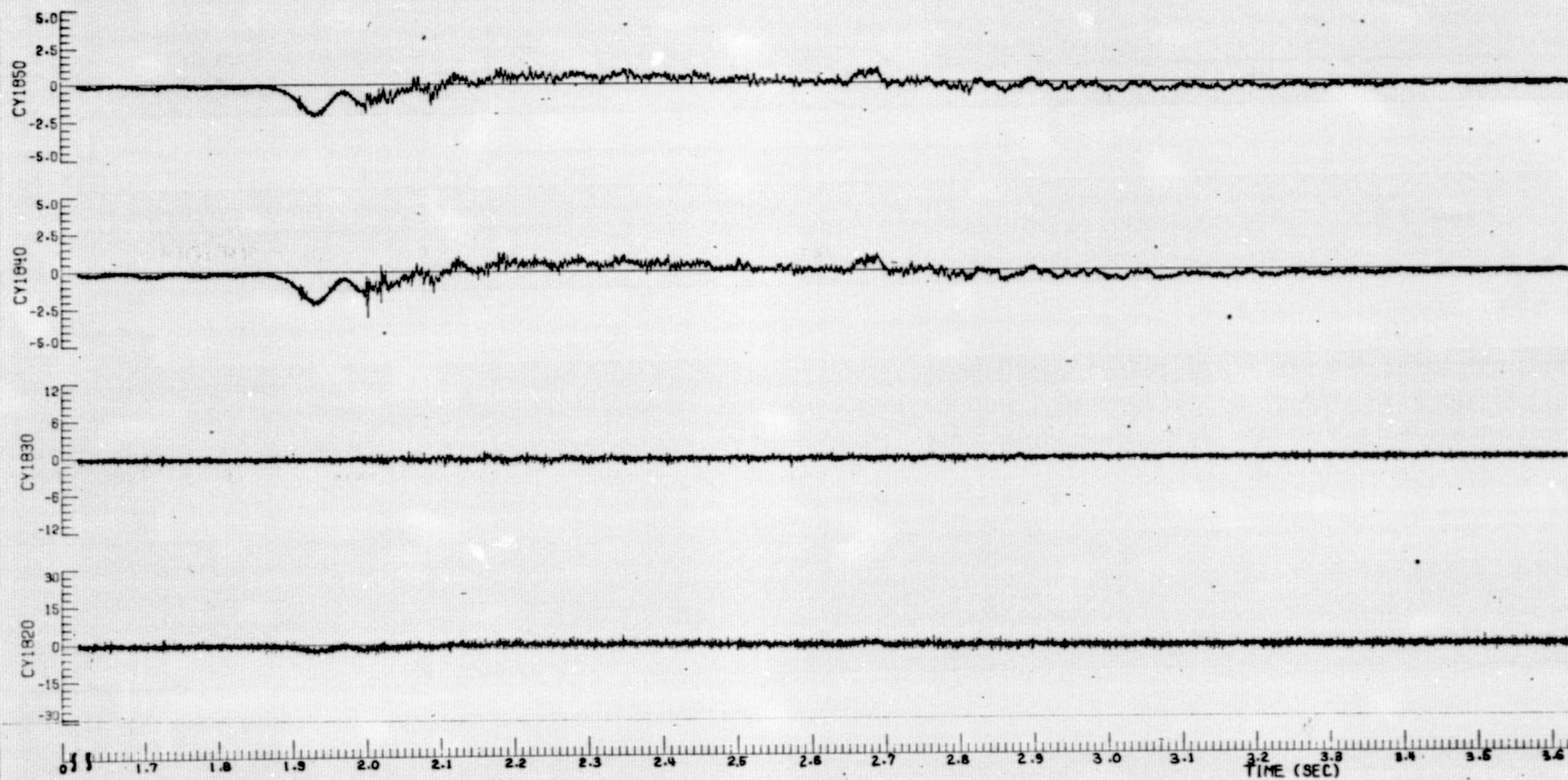
O = 18:42:57 = 67377 sec.

FIGURE 139. TC-3 FLMN 4 - VLC cg Acceleration - T + 237.5 - T + 245 - 1024 sps



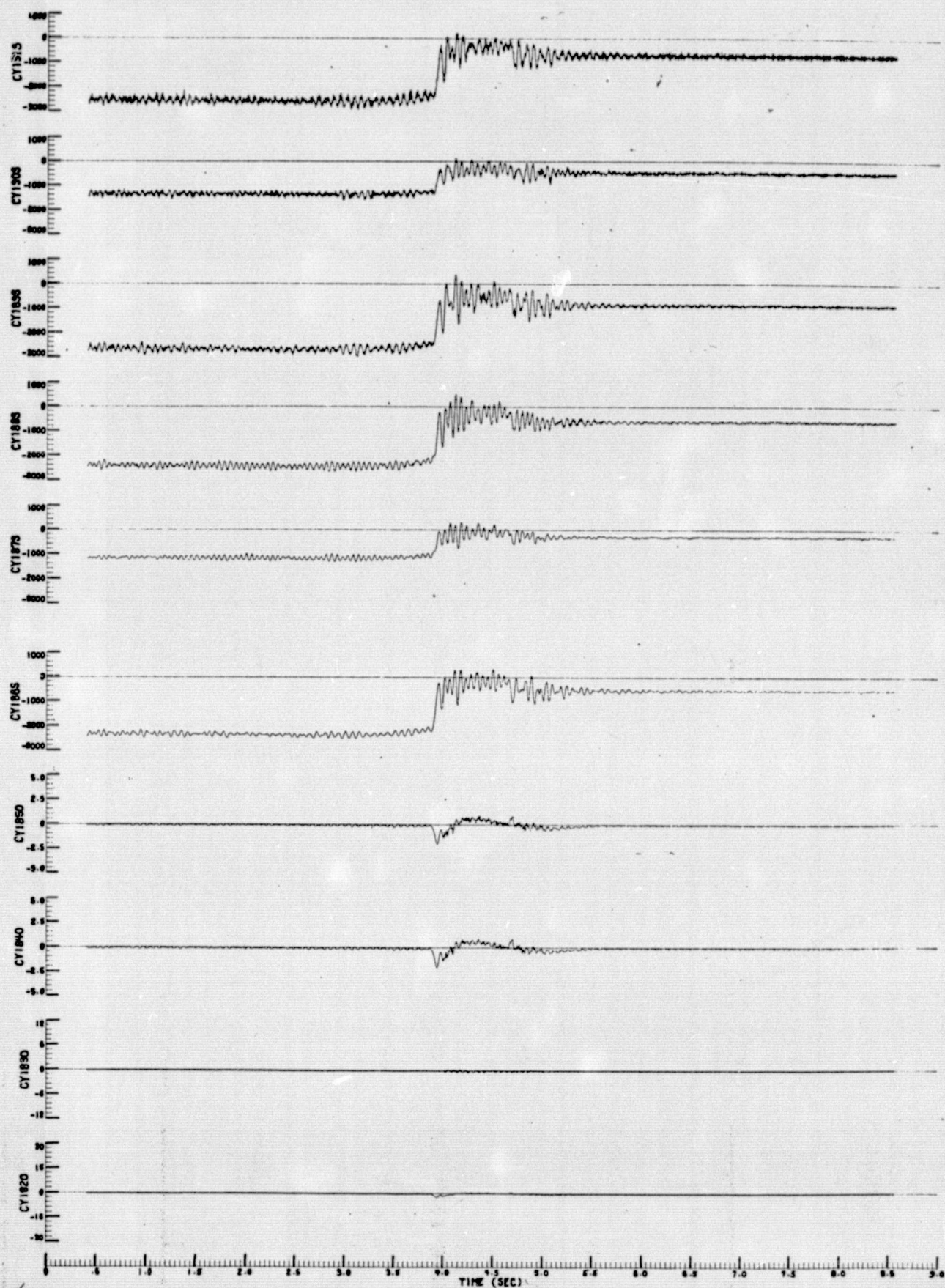
O = 18:42:57 = 67377 sec.

FIGURE 140. TC-3 FLMN 4 - Bus Acceleration - T + 237.5 - T + 245 - 1024 sps



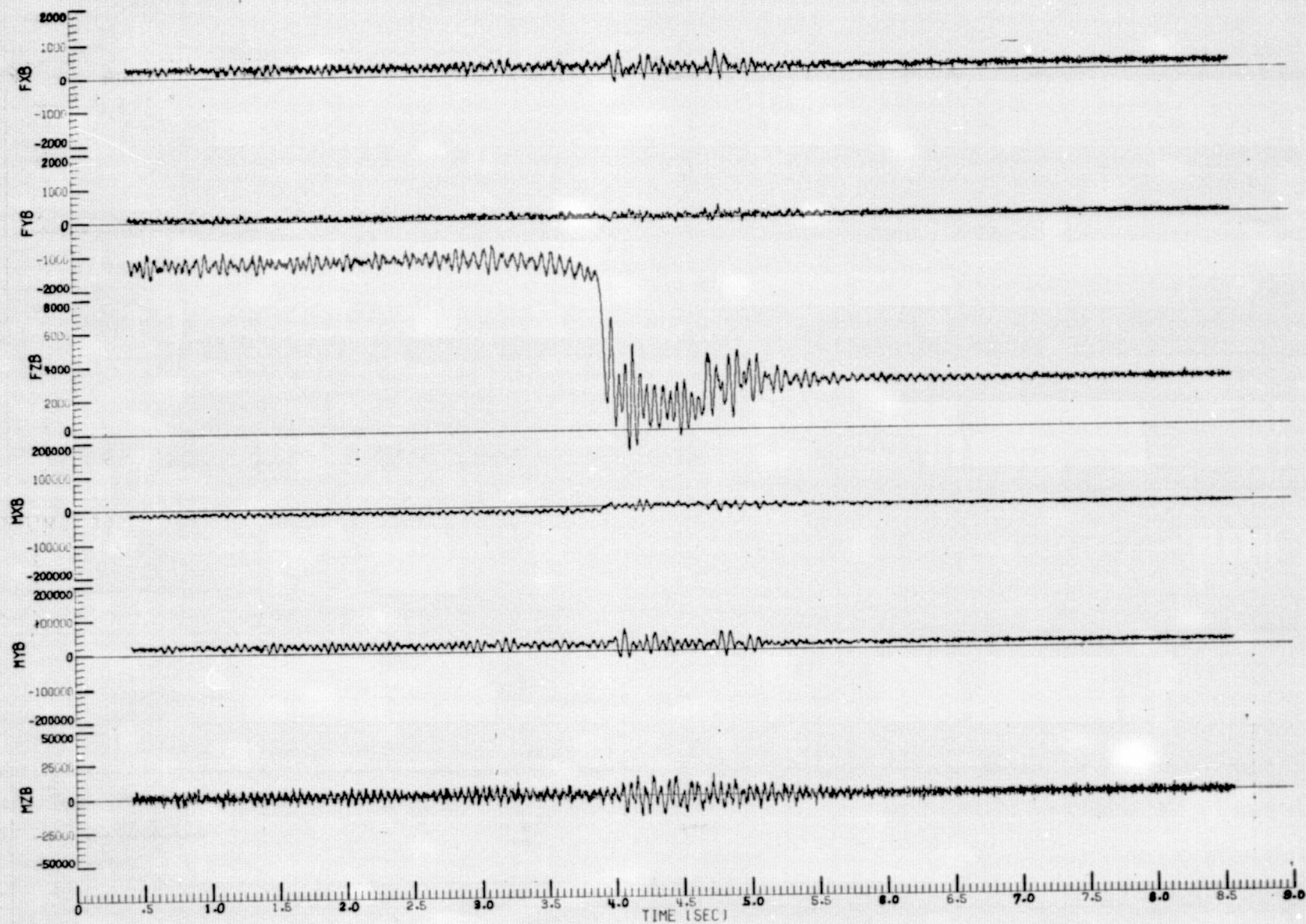
O = 18:43:19 = 67399 sec.

FIGURE 141. TC-3 Stage 1 Burn Out - Vibration Sensors - 4096 sps



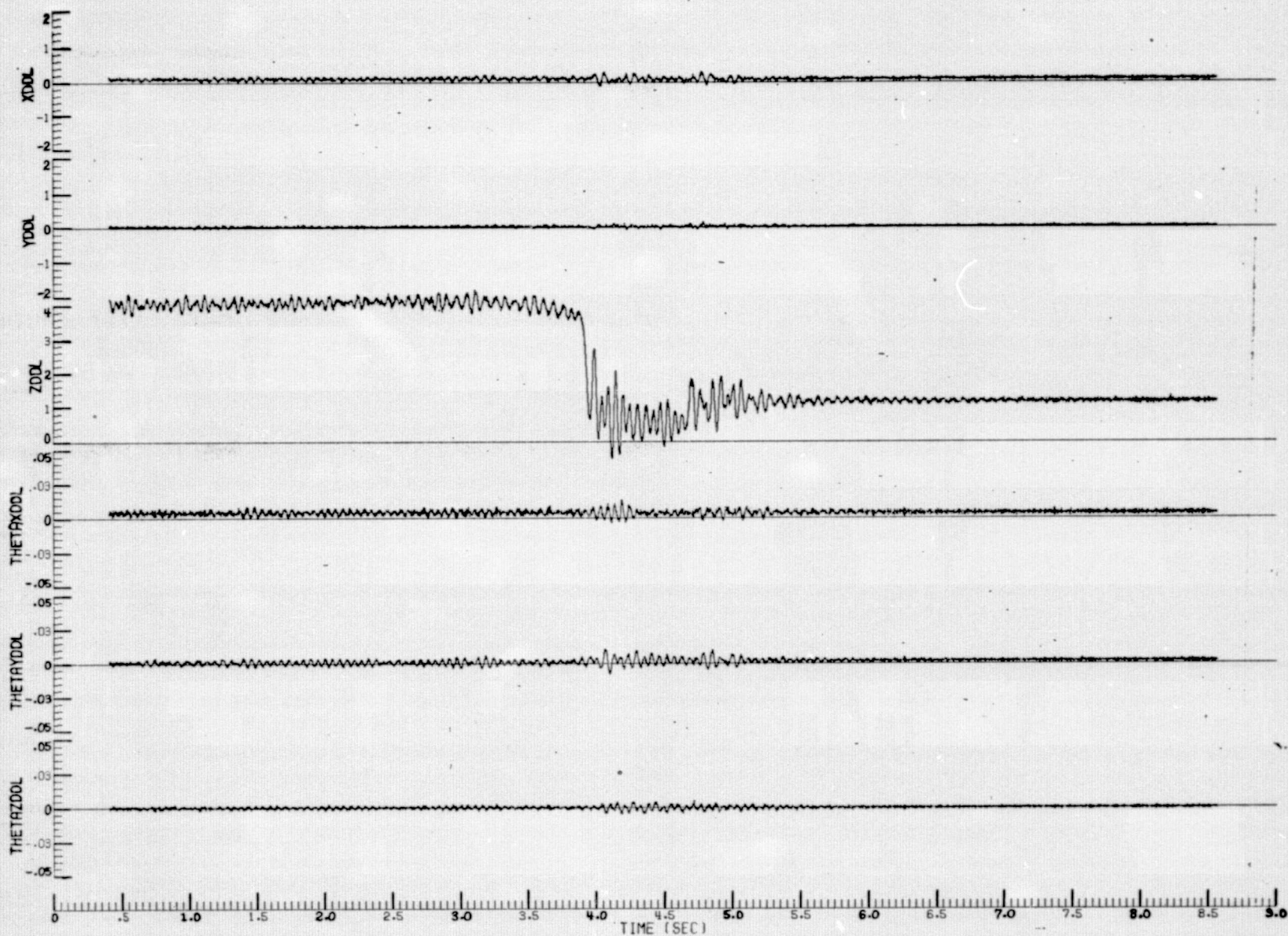
O = 18:43:17 = 67397 sec.

FIGURE 142. TC-3 Stage 1 Burn Out - Strain & Vibration - 1024 sps



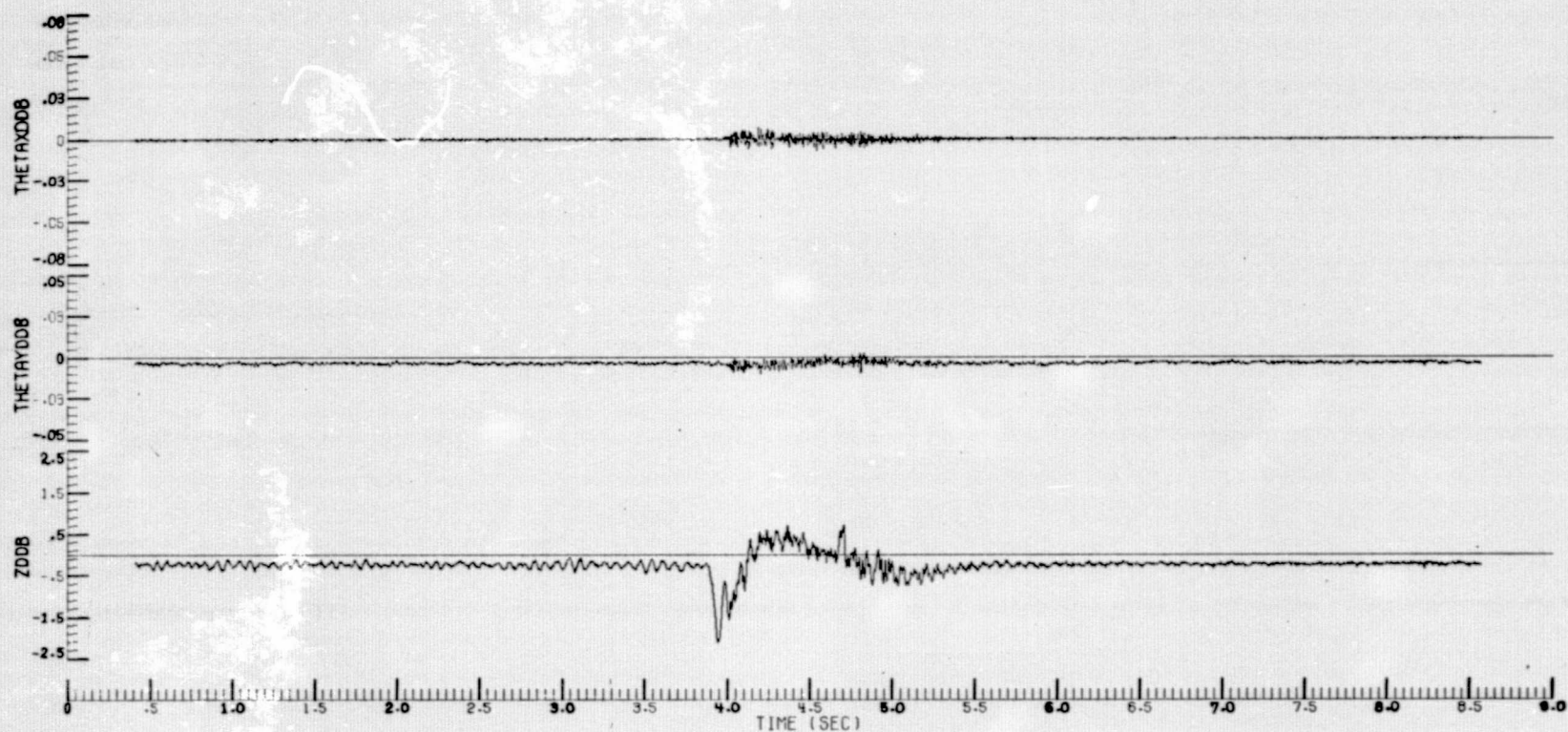
O = 18:43:17 = 67397 sec.

FIGURE 143. TC-3 Stage 1 Burn Out - Forces & Moments - 1024 sps



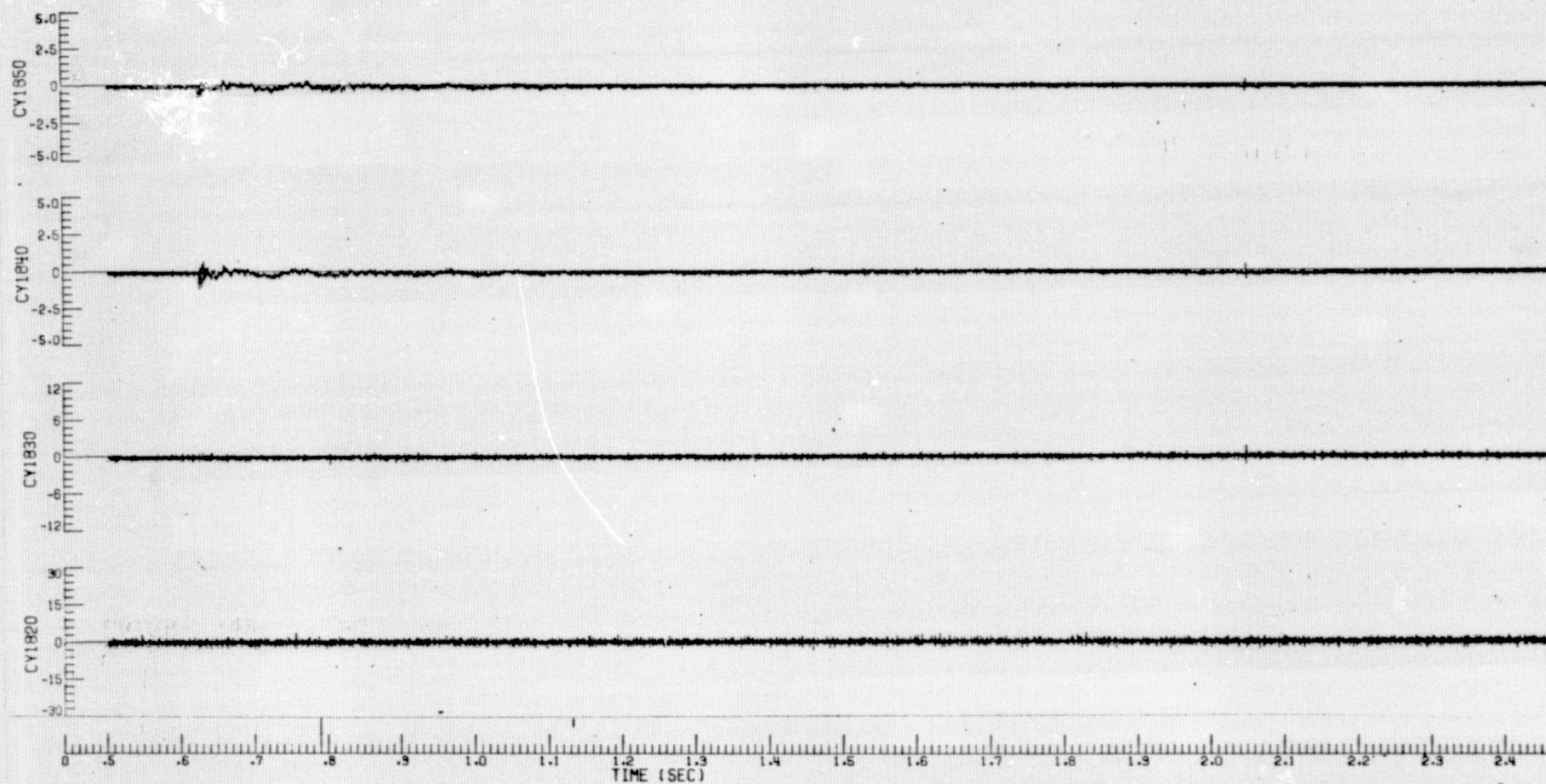
O = 18:43:17 = 67397 sec.

FIGURE 144. TC-3 Stage 1 Burn Out - VLC cg Acceleration - 1024 sps



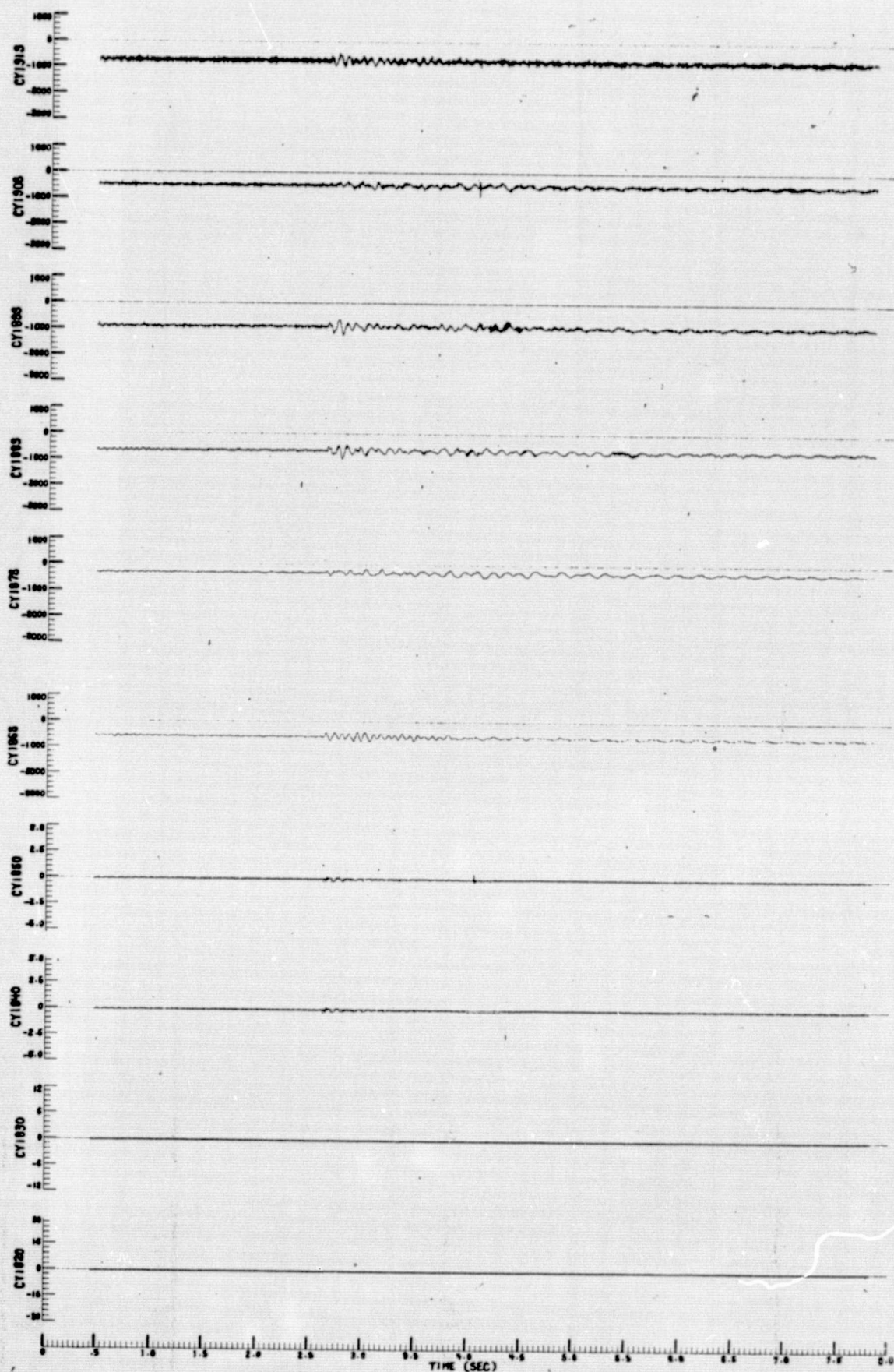
O = 18:43:17 = 67397 sec.

FIGURE 145. TC-3 Stage 1 Burn Out - Bus Acceleration - 1024 sps



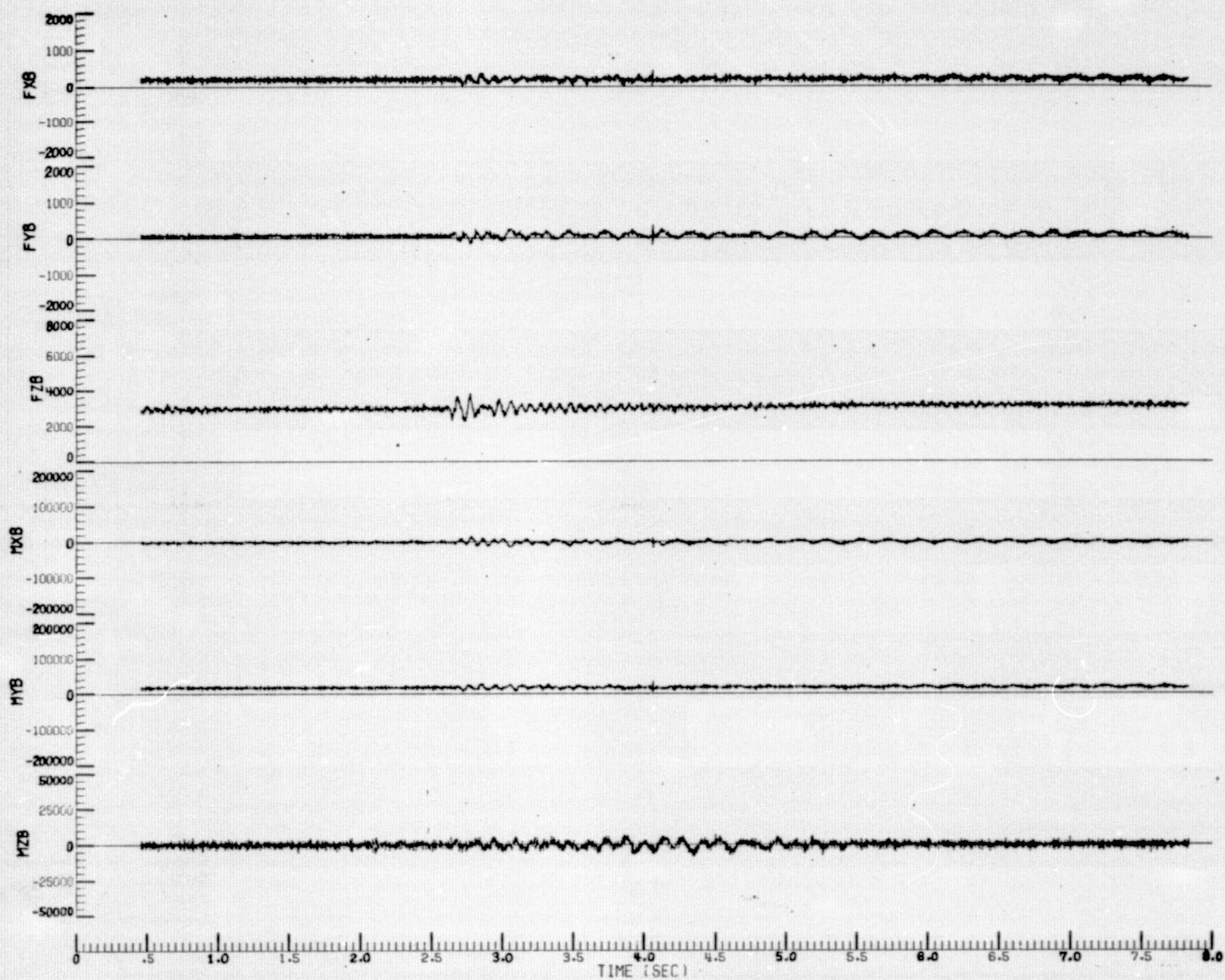
O = 18:43:31 = 67411 sec.

FIGURE 146. TC-3 Jettison Shroud - Vibration Sensors - 4096 sps



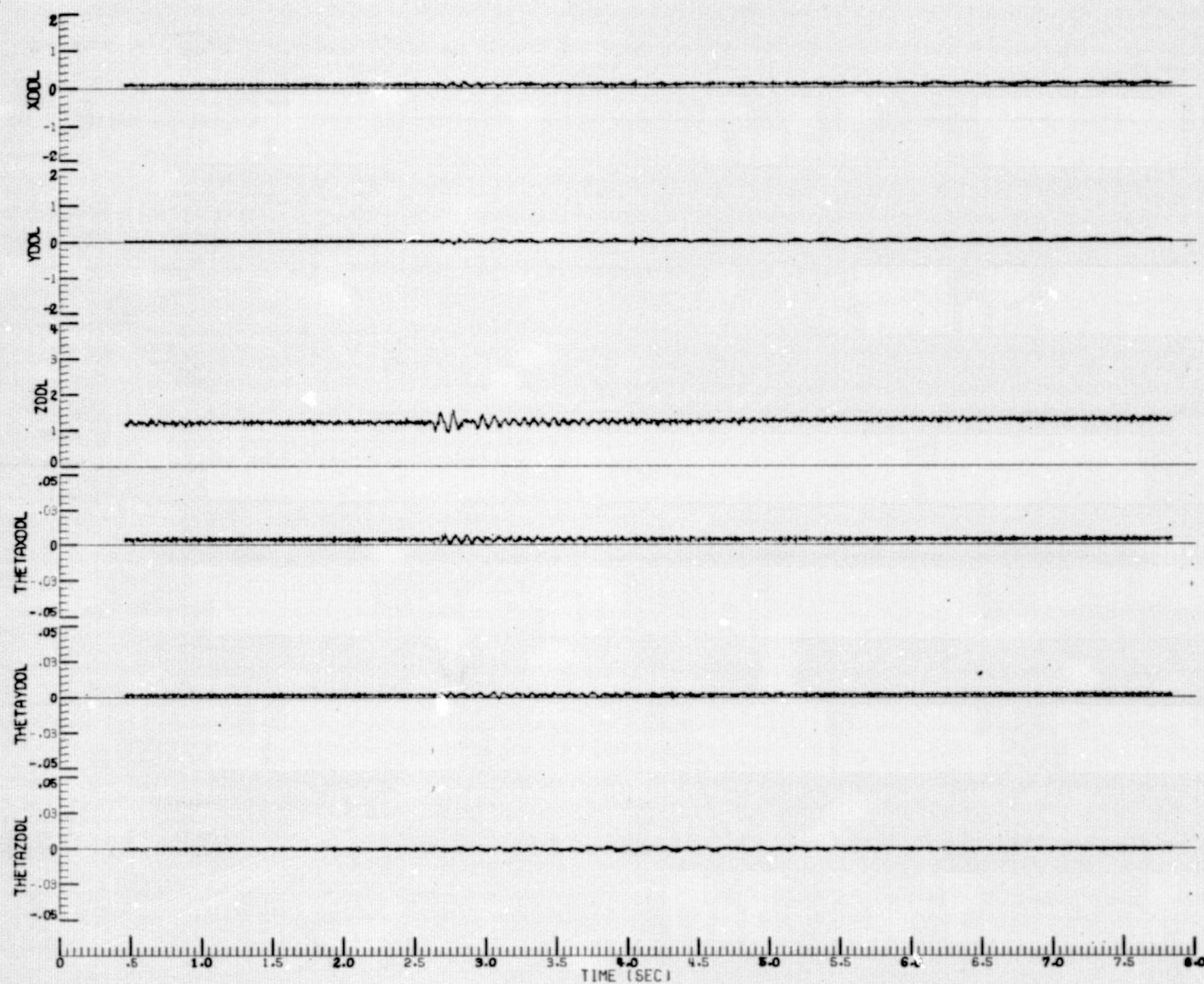
O = 18:43:29 = 67409 sec.

FIGURE 147. TC-3 Jettison Shroud - Strains & Vibration - 1024 sps



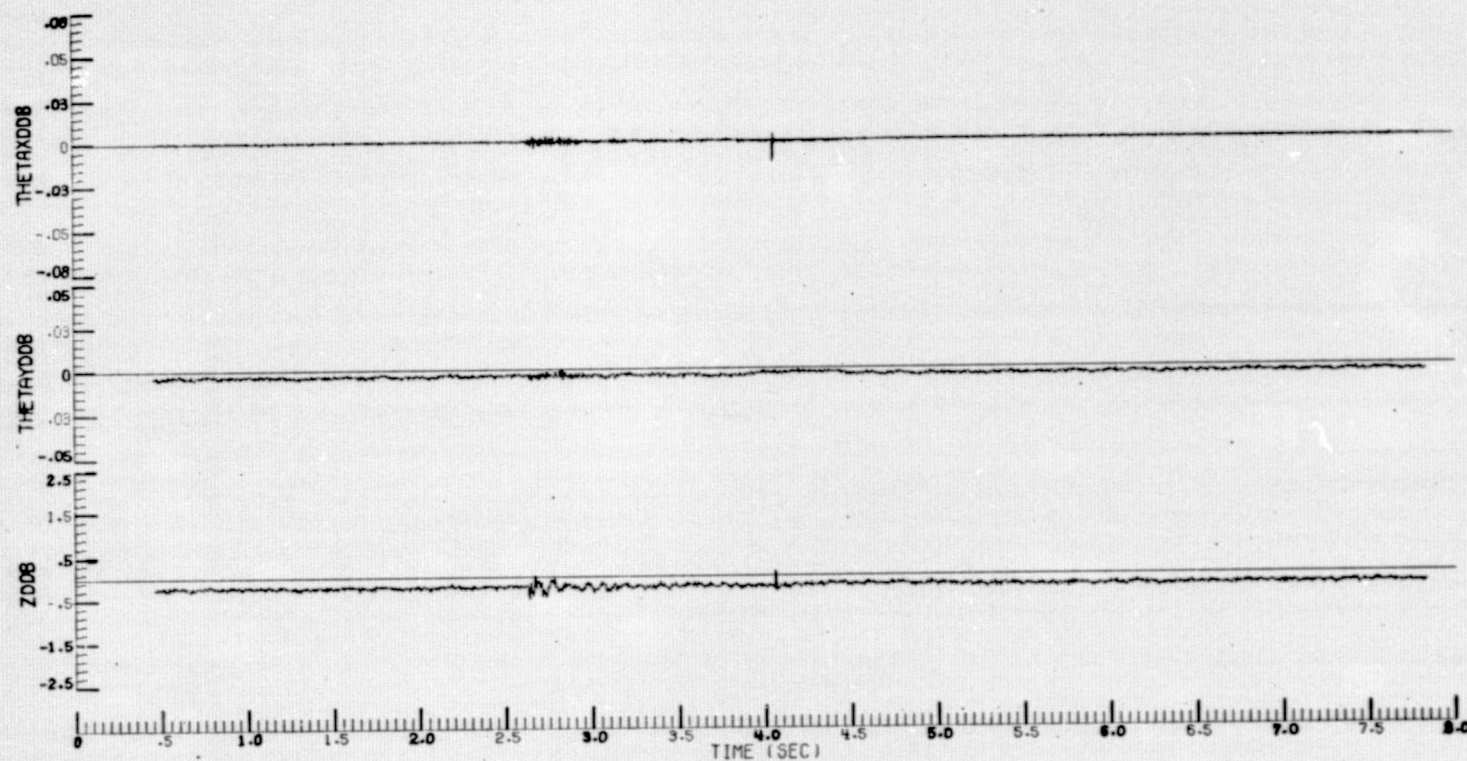
O = 18:43:29 = 67409 sec.

FIGURE 148. TC-3 Jettison Shroud - Forces & Moments - 1024 sps



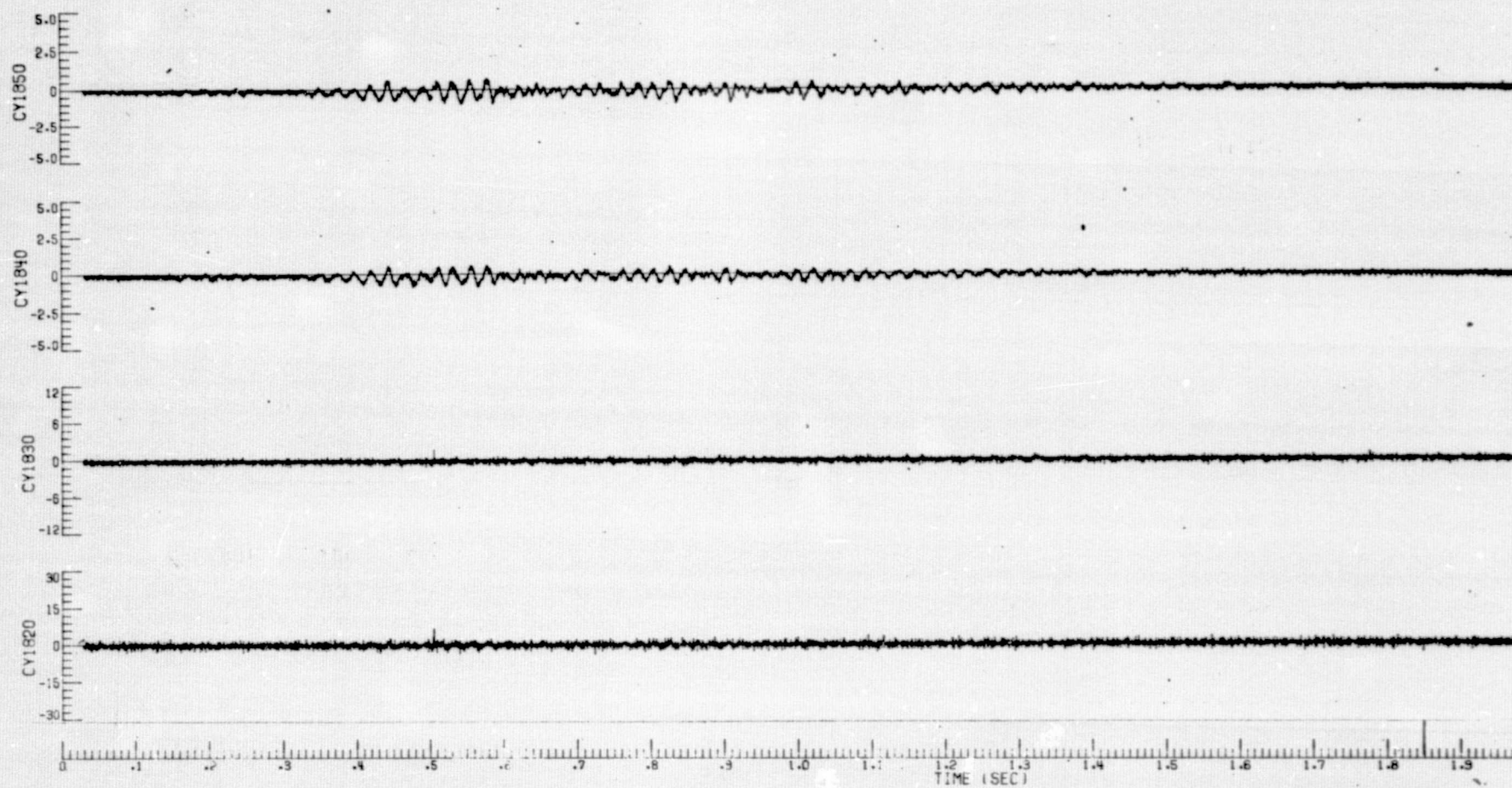
O = 18:43:29 = 67409 sec.

FIGURE 149. TC-3 Shroud Jettison - VLC cg Acceleration - 1024 sps



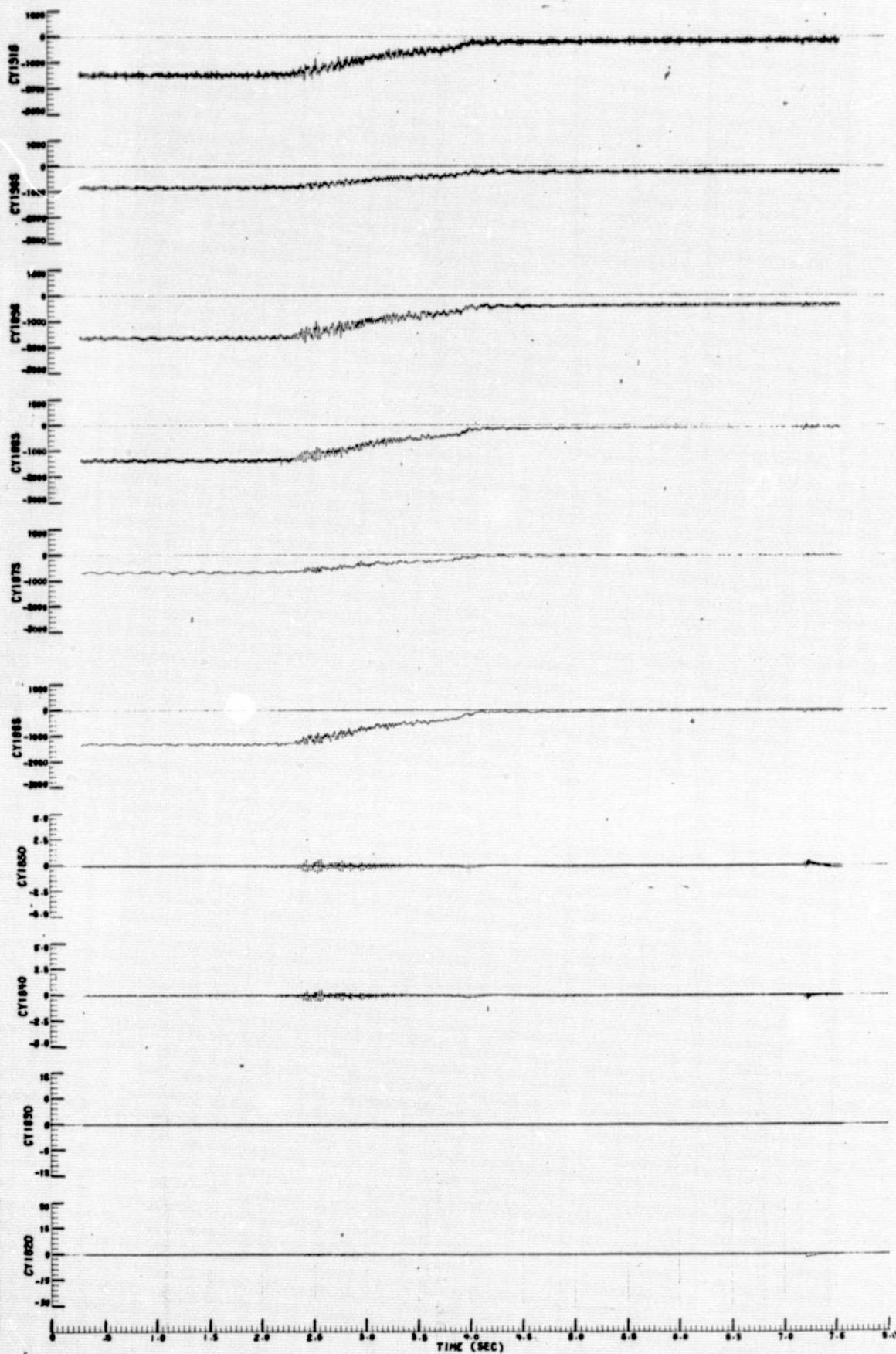
O = 18:43:29 = 67409 sec.

FIGURE 150. TC-3 Jettison Shroud - Bus Acceleration - 1024 sps



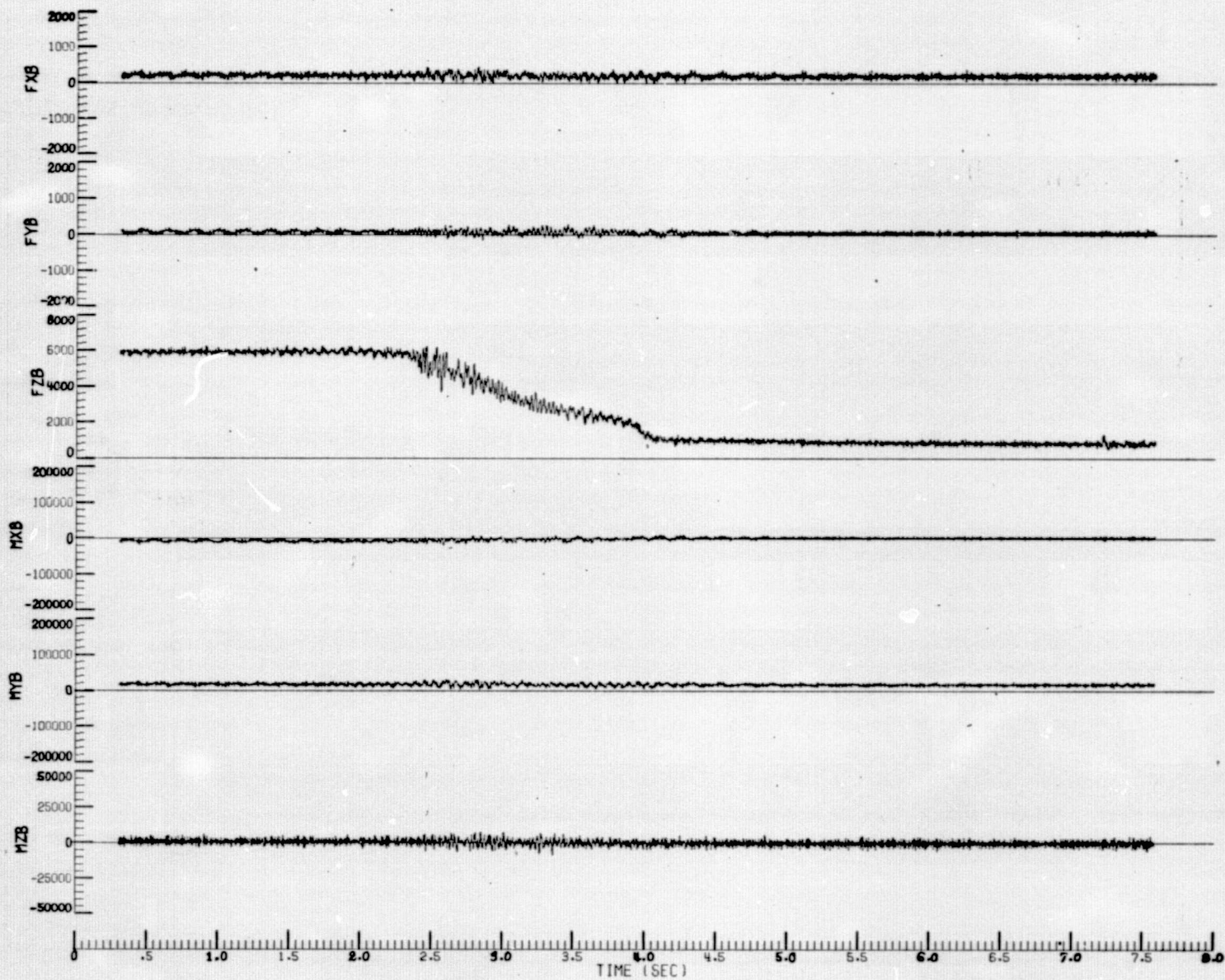
O = 18:46:48 = 67608 sec.

FIGURE 151. TC-3 Stage 2 Burn Out - Vibration Sensors - 4096 sps



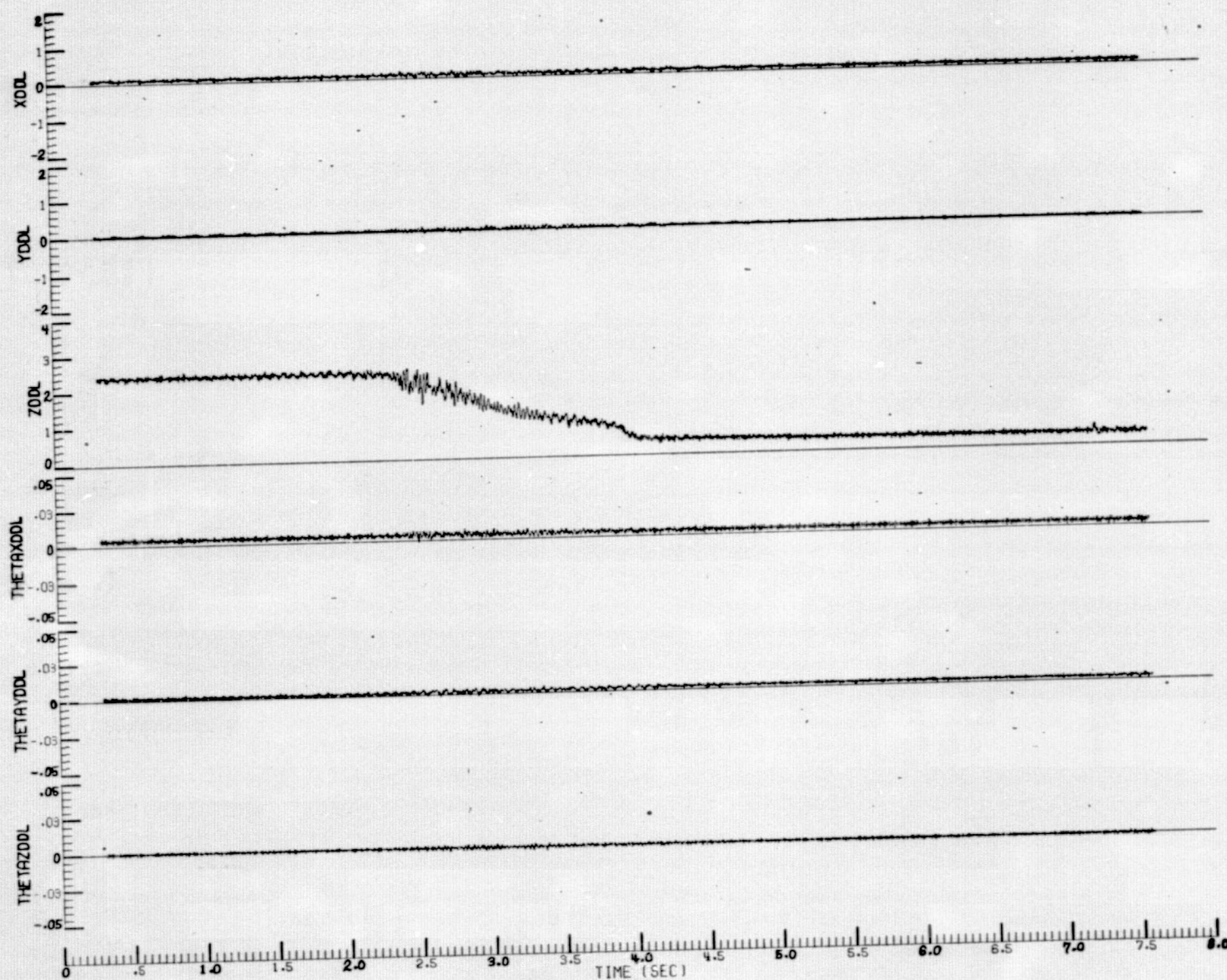
O = 18:46:46 = 67606 sec.

FIGURE 152. TC-3 Stage 2 Burn Out - Strains & Vibration - 1024 sps



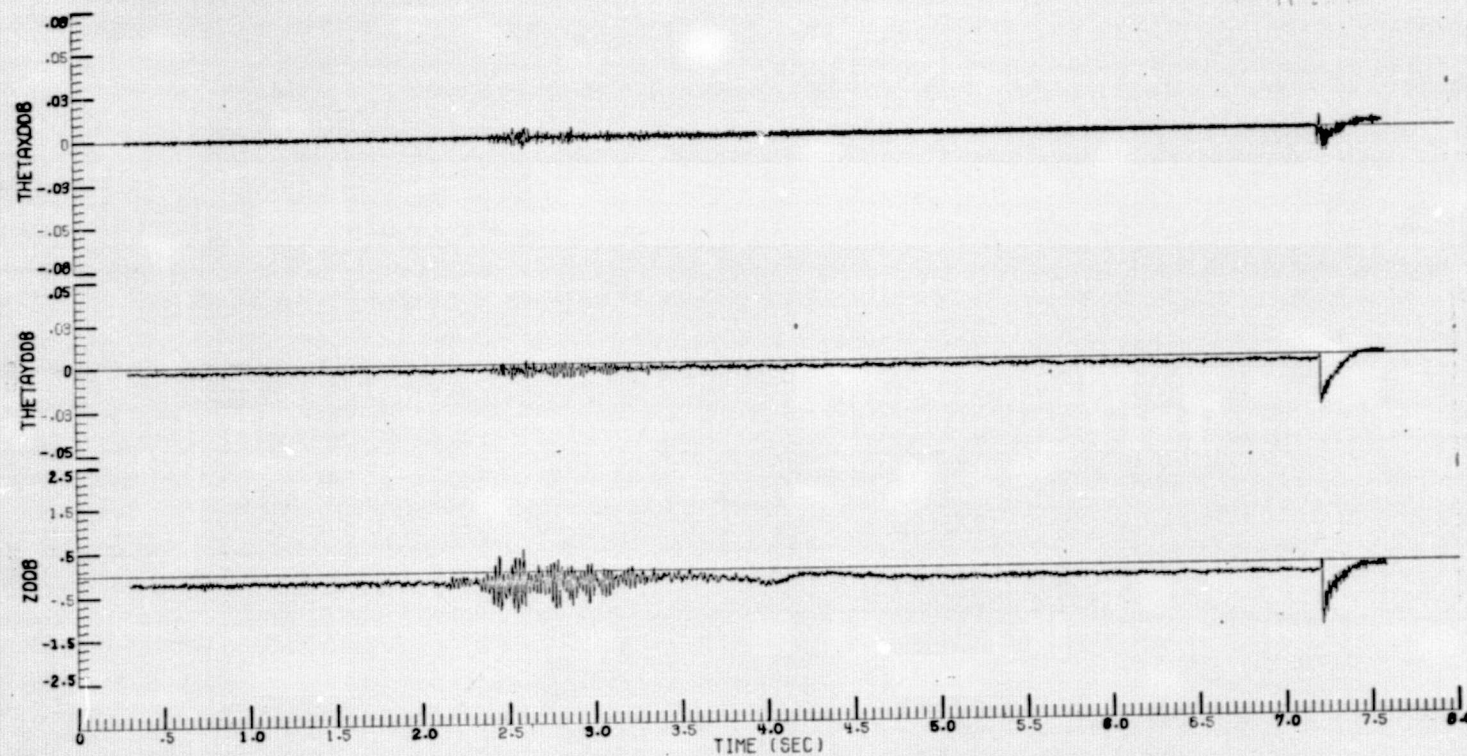
O = 18:46:46 = 67606 sec.

FIGURE 153. TC-3 Stage 2 Burn Out - Forces & Moments - 1024 sps



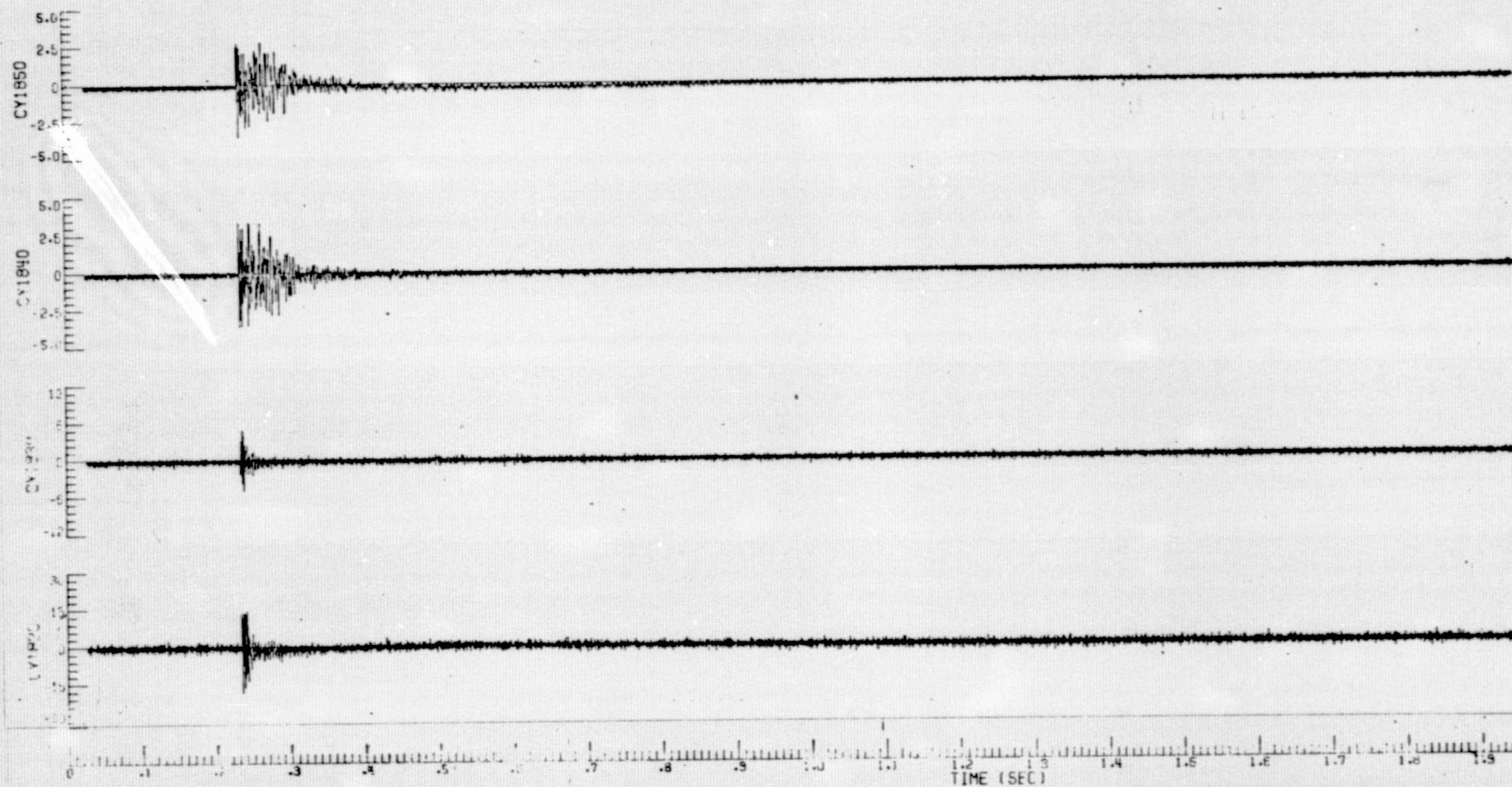
O = 18:46:46 = 67606 sec.

FIGURE 154. TC-3 Stage 2 Burn Out - VLC cg Acceleration - 1024 sps



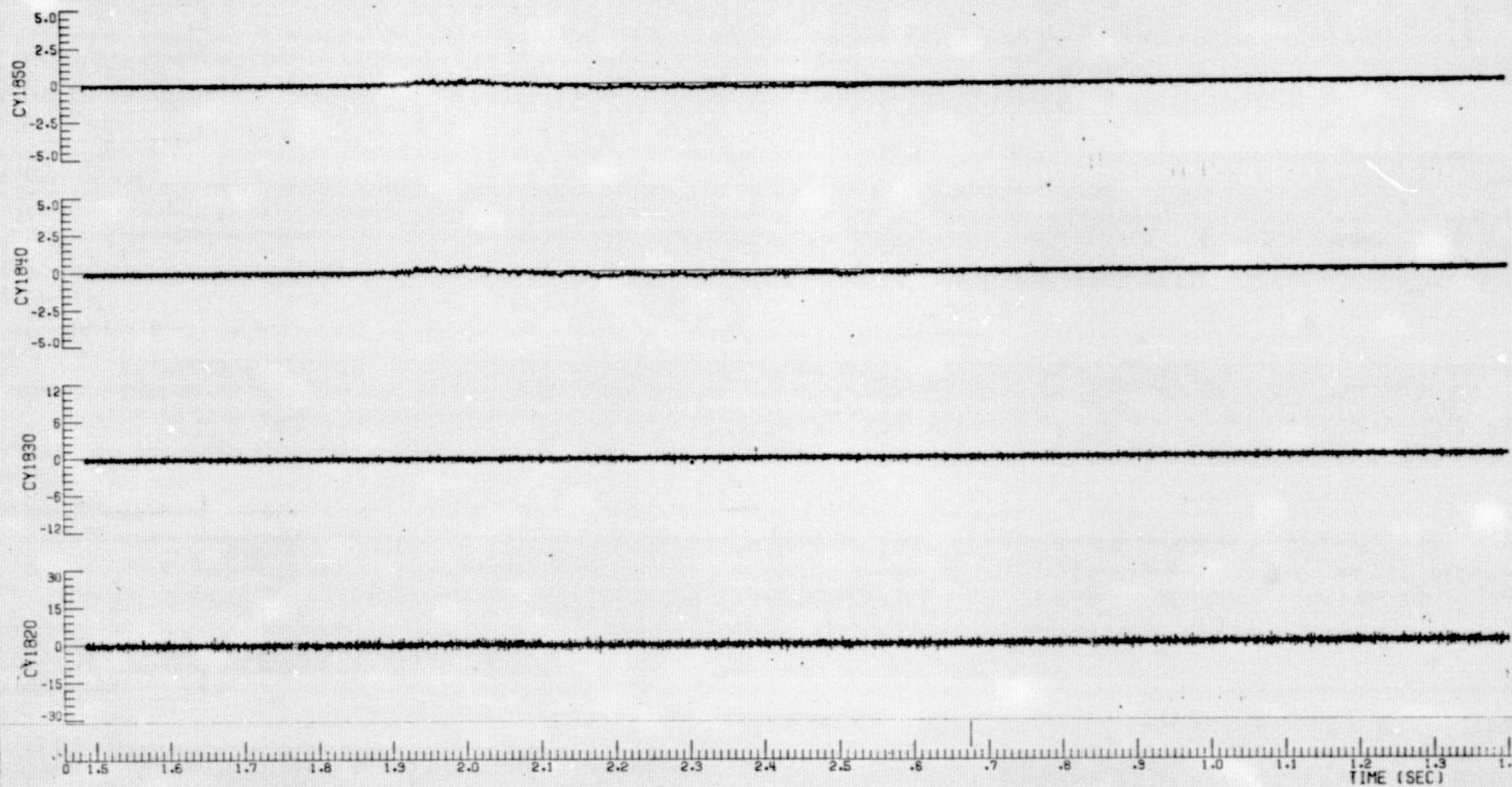
O = 18:46:46 = 67606 sec.

FIGURE 155. TC-3 Stage 2 Burn Out - Bus Acceleration - 1024 sps



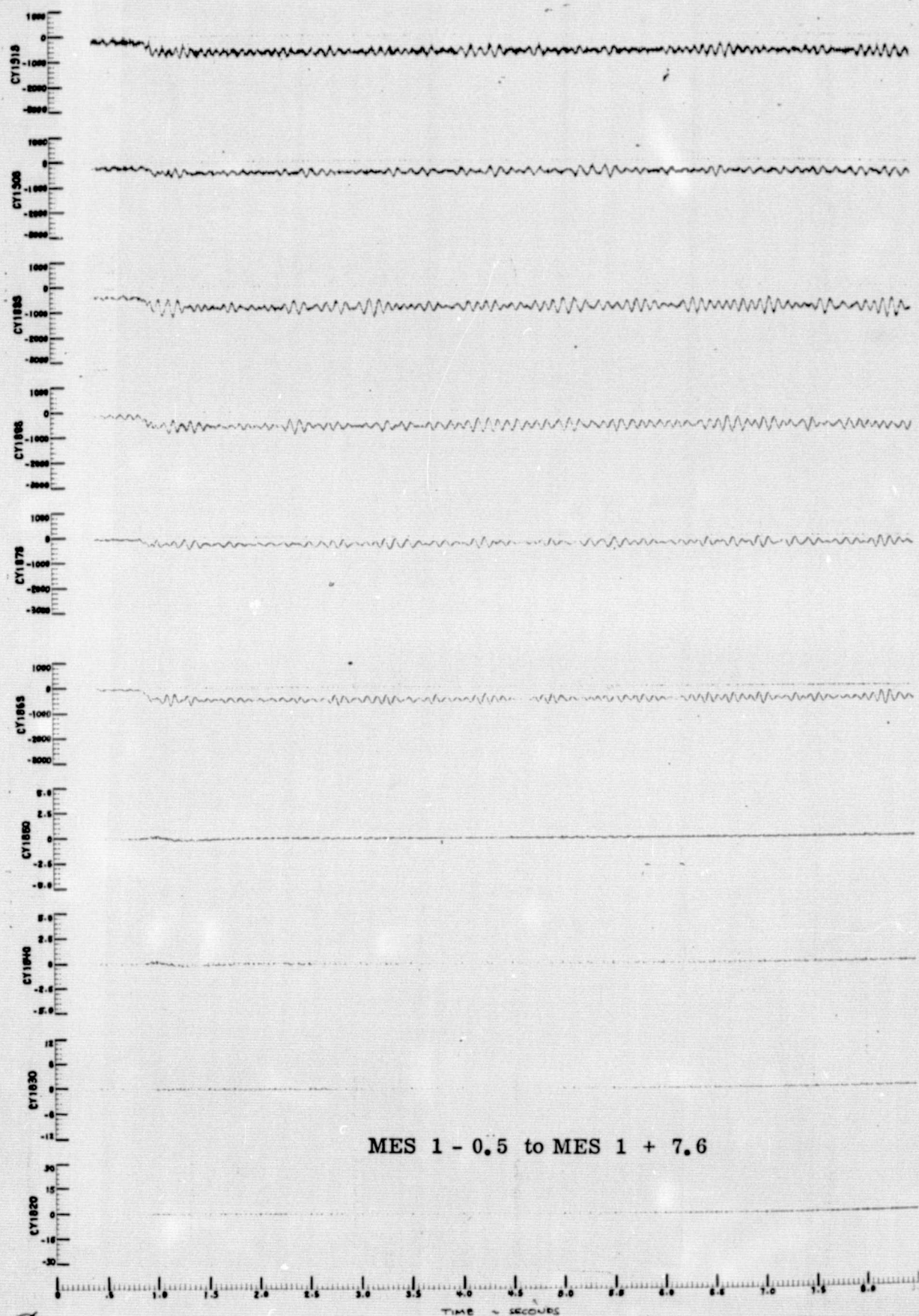
O = 18:46:53 = 67613 sec.

FIGURE 156. TC-3 Titan-Centaur Separations - Vibration Sensors - 4096 sps



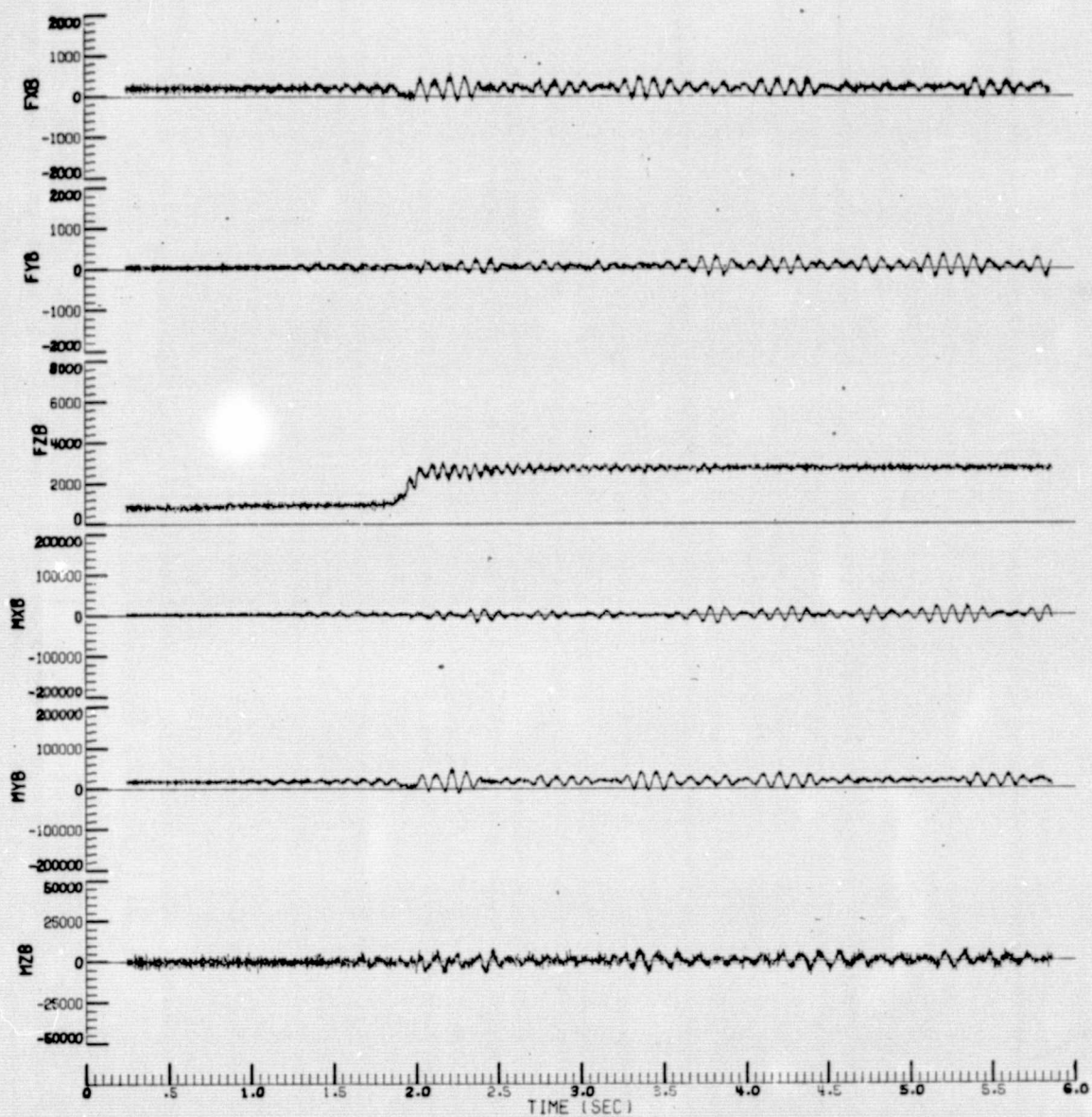
O = 18:47:03 = 67603 sec.

FIGURE 157. TC-3 MES 1 - Vibration Sensors - 4096 sps



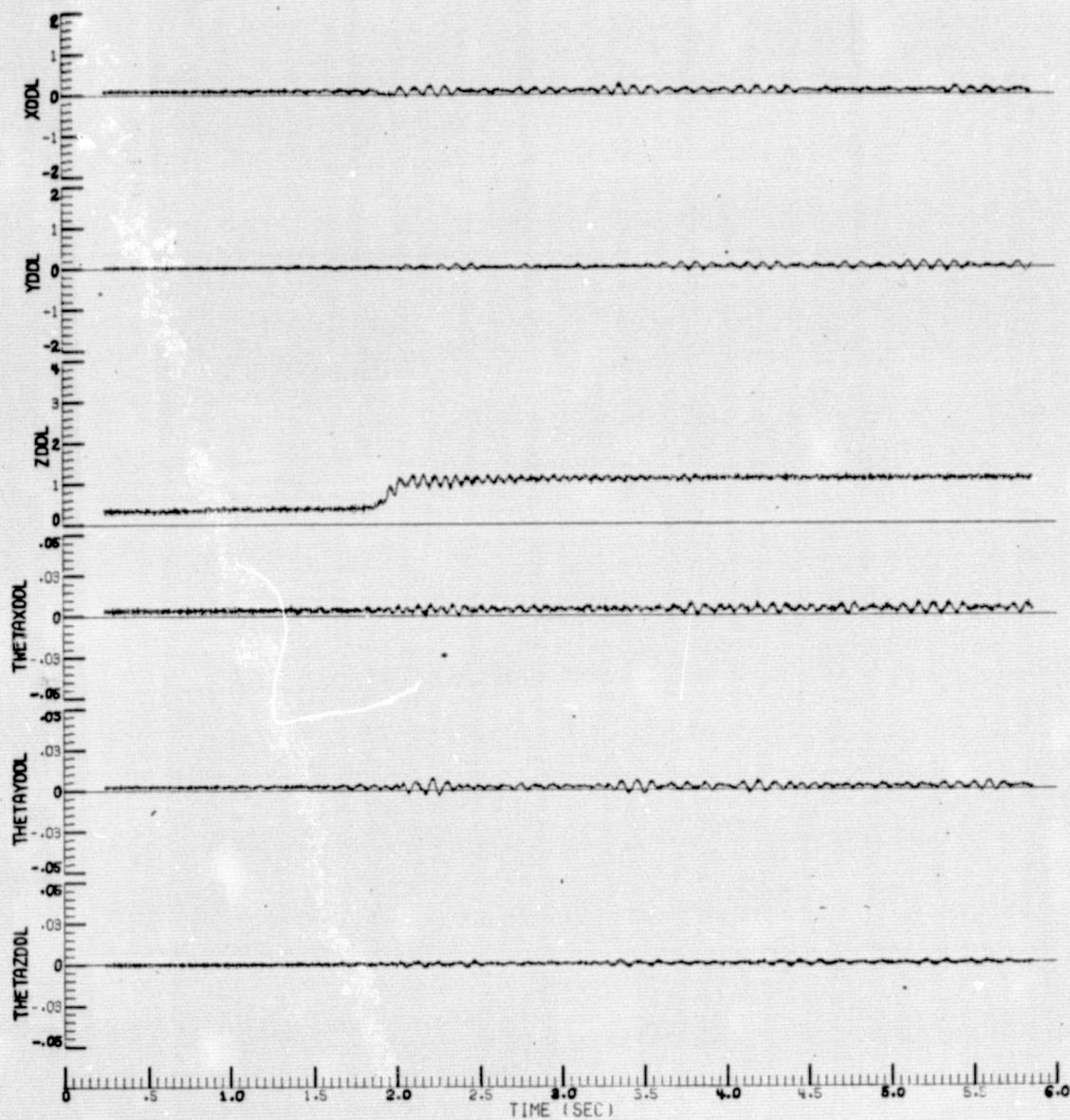
O = 18:47:04 = 67624 sec.

FIGURE 158. TC-3 Centaur First Burn - Strain & Vibration



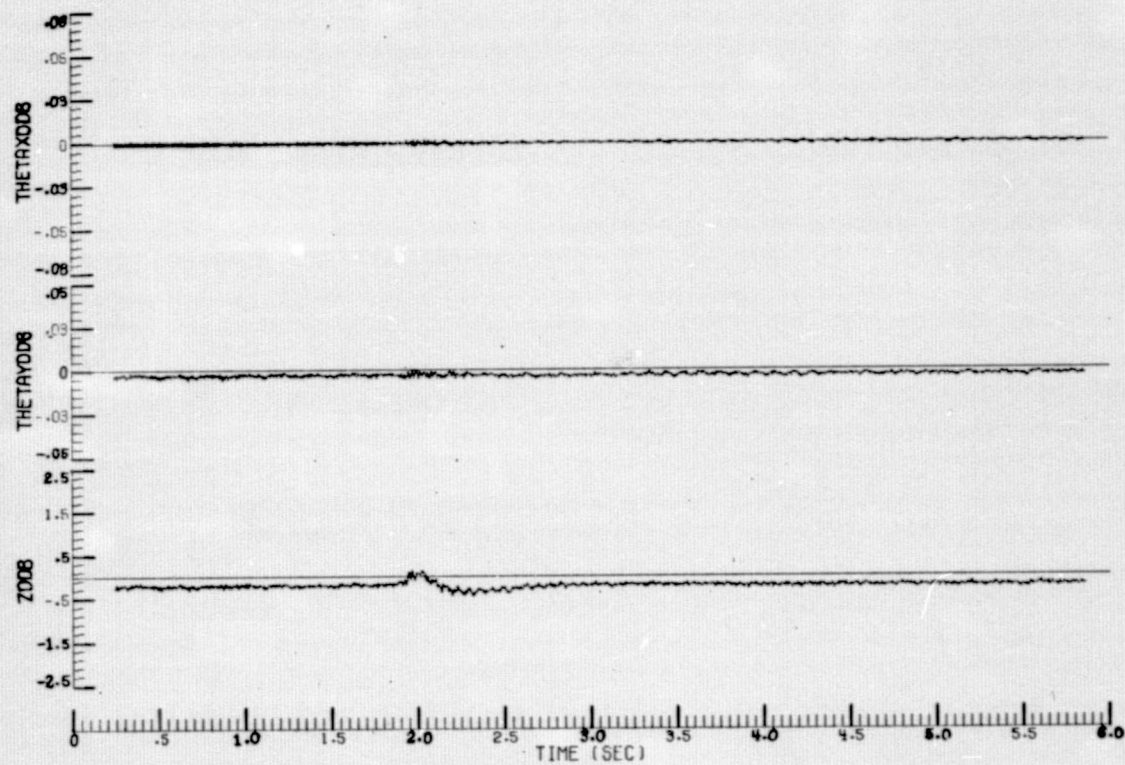
O = 18:47:03 = 67623 sec.

FIGURE 159. TC-3 MES 1 - Forces & Moments - 1024 sps



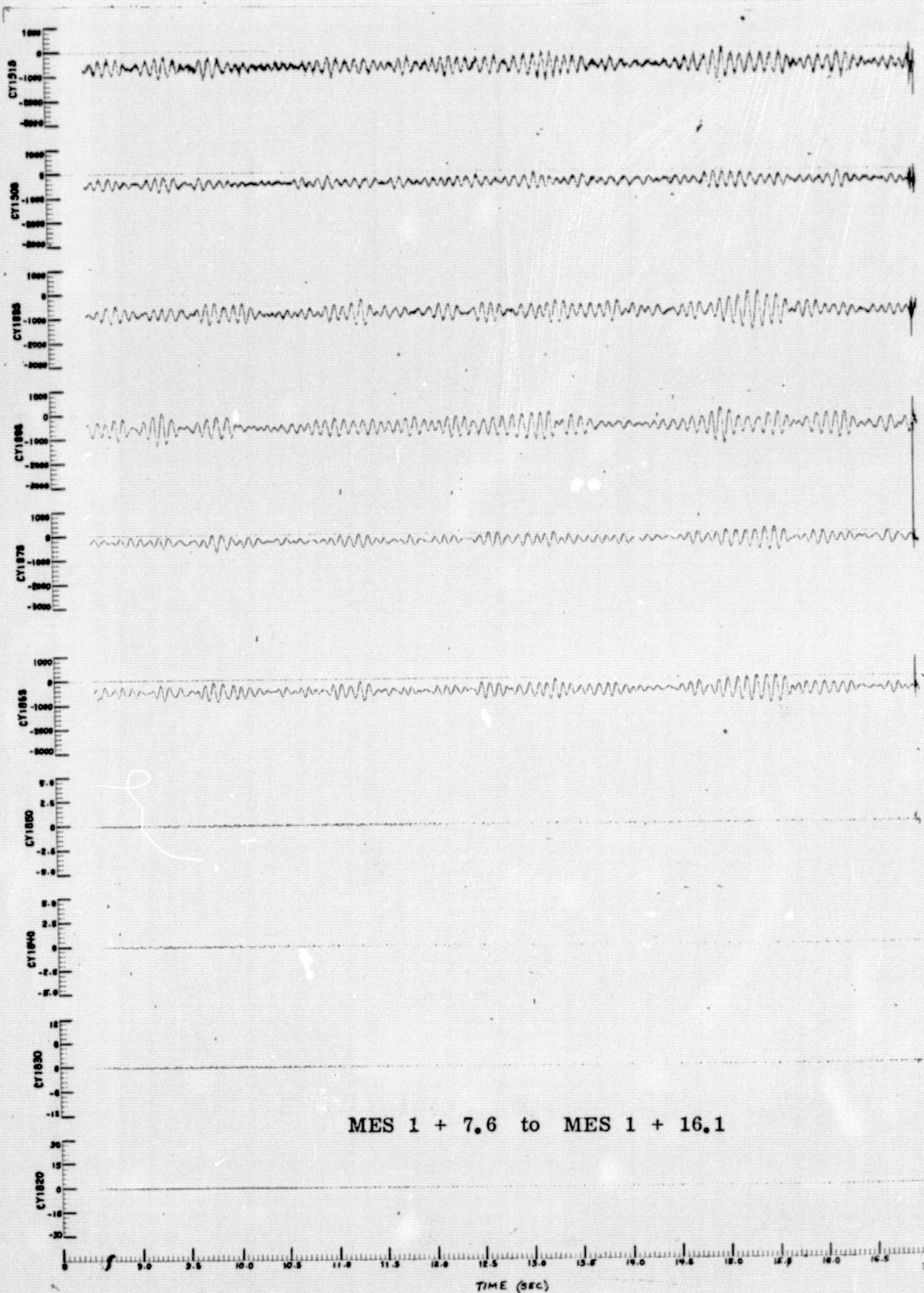
O = 18:47:03 = 67623 sec.

FIGURE 160. TC-3 MES-1 VLC cg Acceleration - 1024 sps



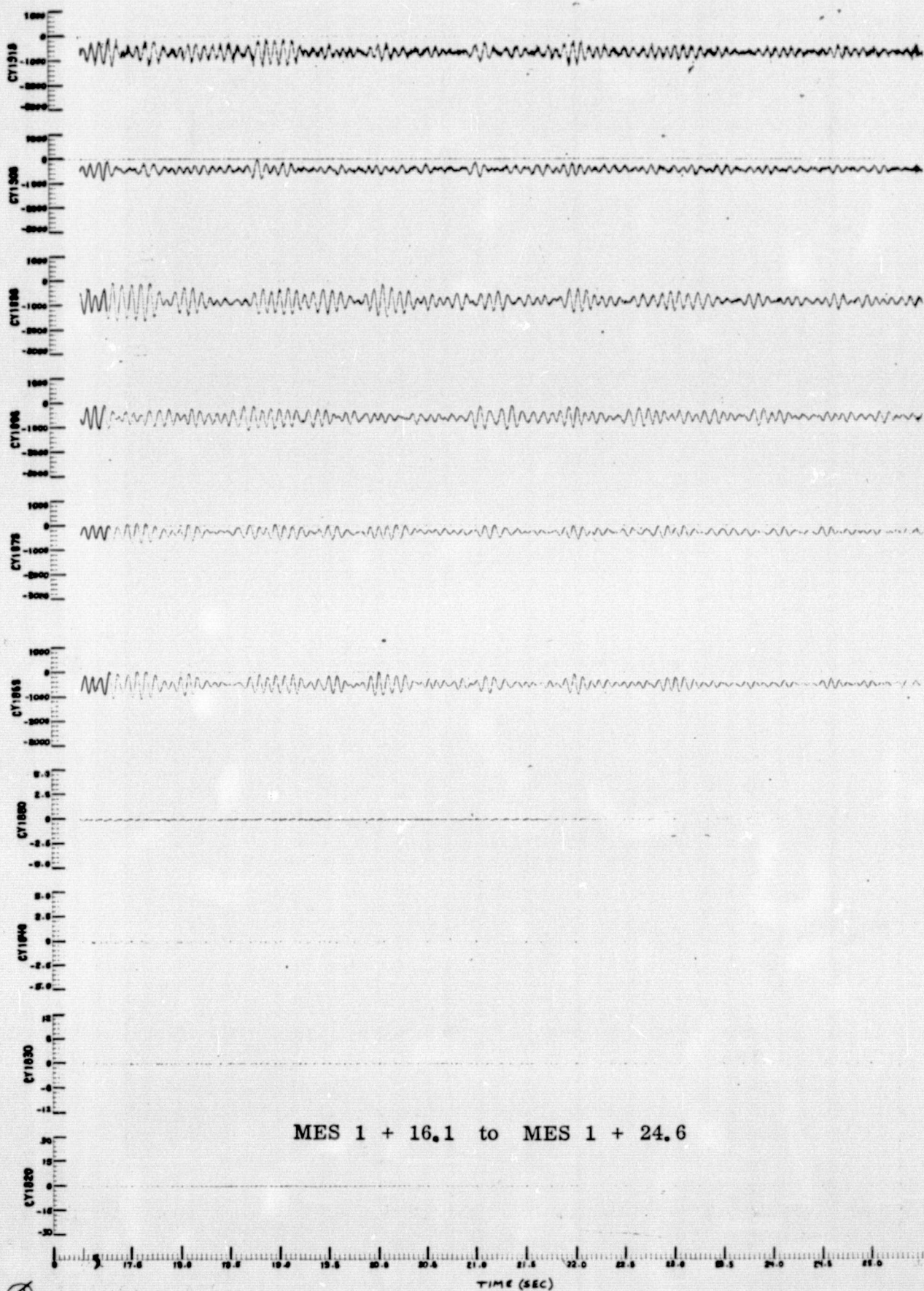
O = 18:47:03 = 67623 sec.

FIGURE 161. TC-3, MES-1 - Bus Acceleration - 1024 sps



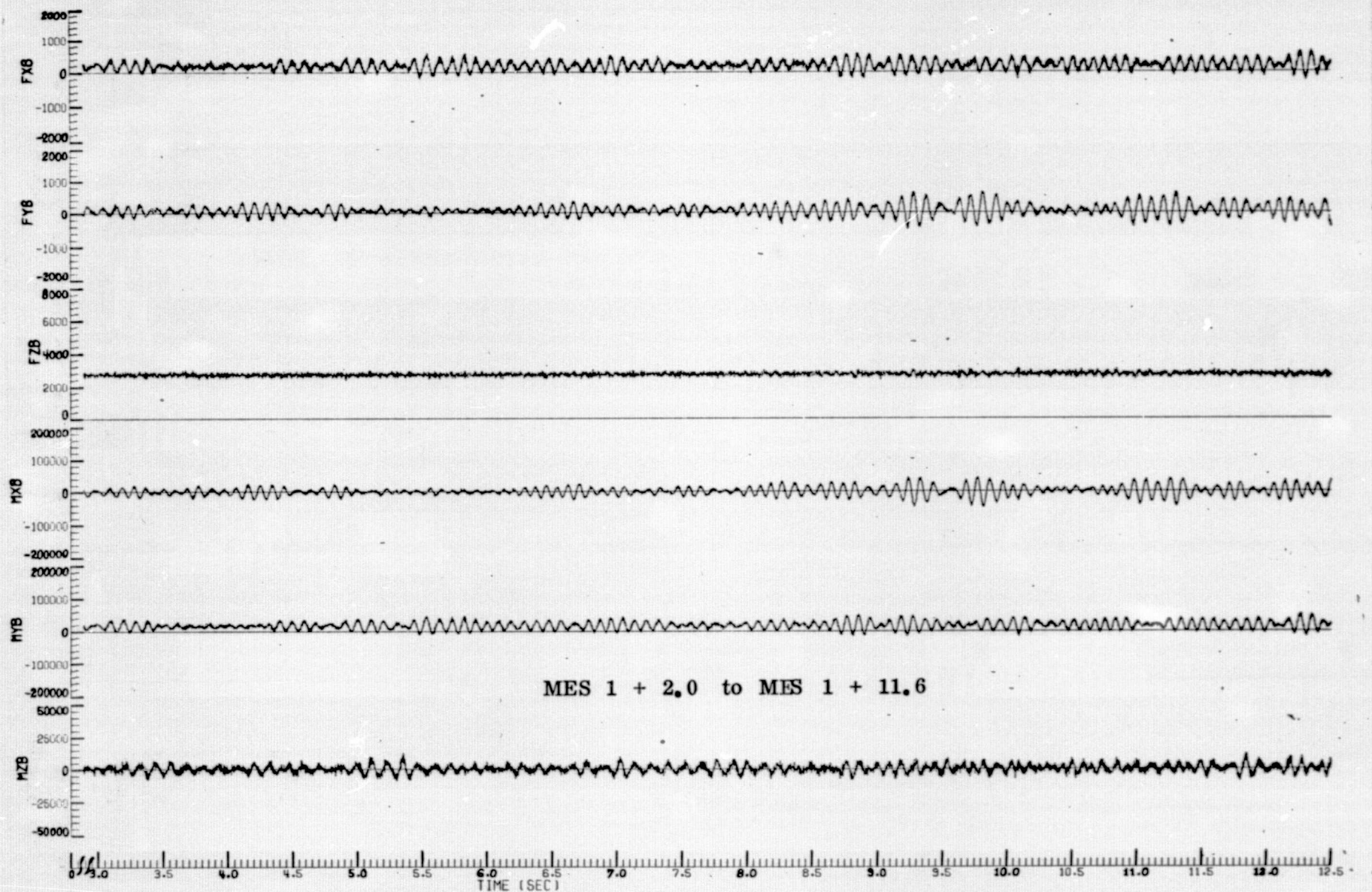
O = 18:47:04 = 67624 sec.

FIGURE 162. TC-3 Centaur First Burn - Strain & Vibration



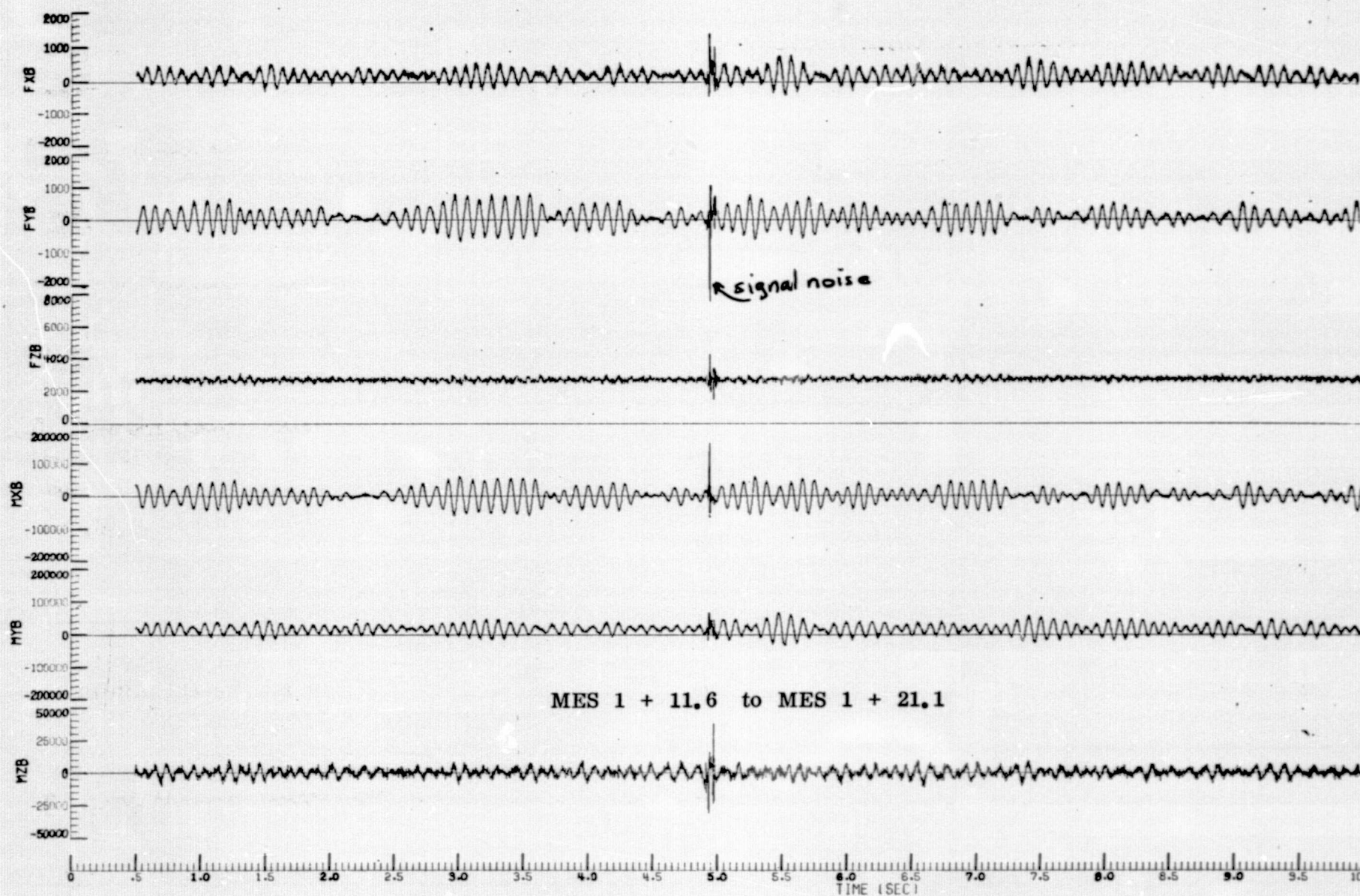
O = 18:47:04 = 67624 sec.

FIGURE 163. TC-3 Centaur First Burn - Strain & Vibration - 1024 sps



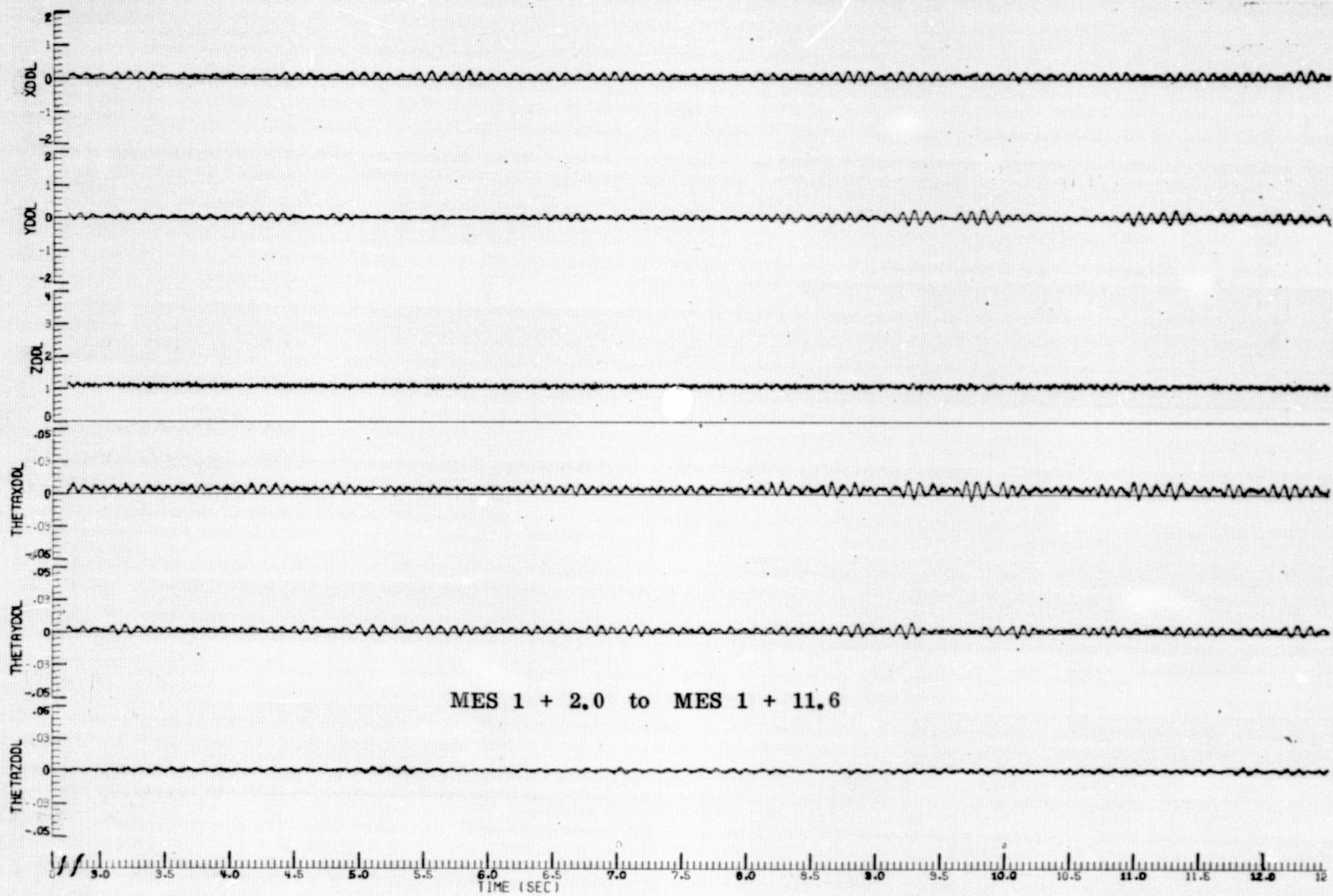
O = 18:17:04 = 67624 sec.

FIGURE 164. TC-3 Centaur First Burn - Forces & Moments - 1024 sps



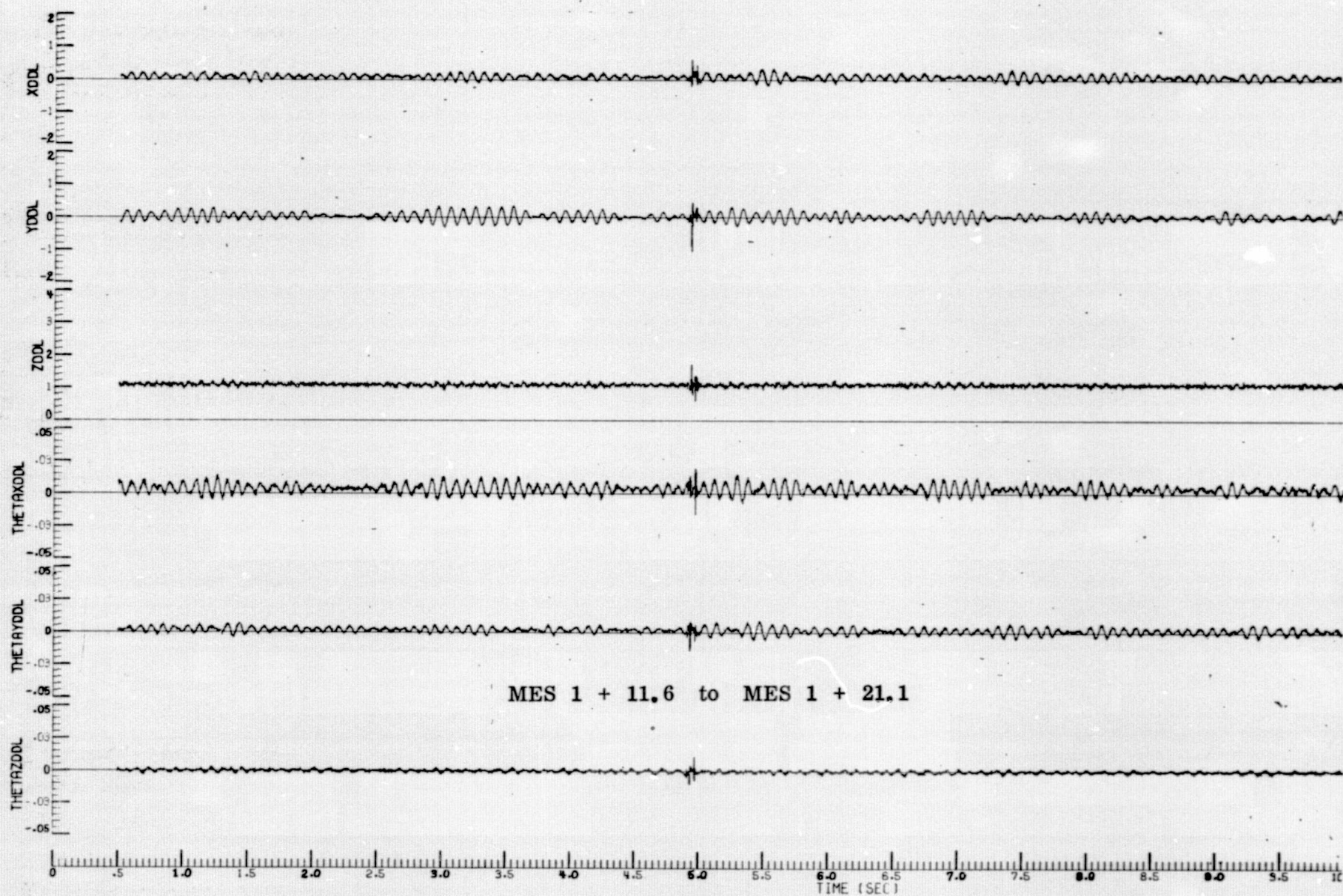
O = 18:47:16 = 67636 sec.

FIGURE 165. TC-3 Centaur First Burn - Forces & Moments - 1024 sps



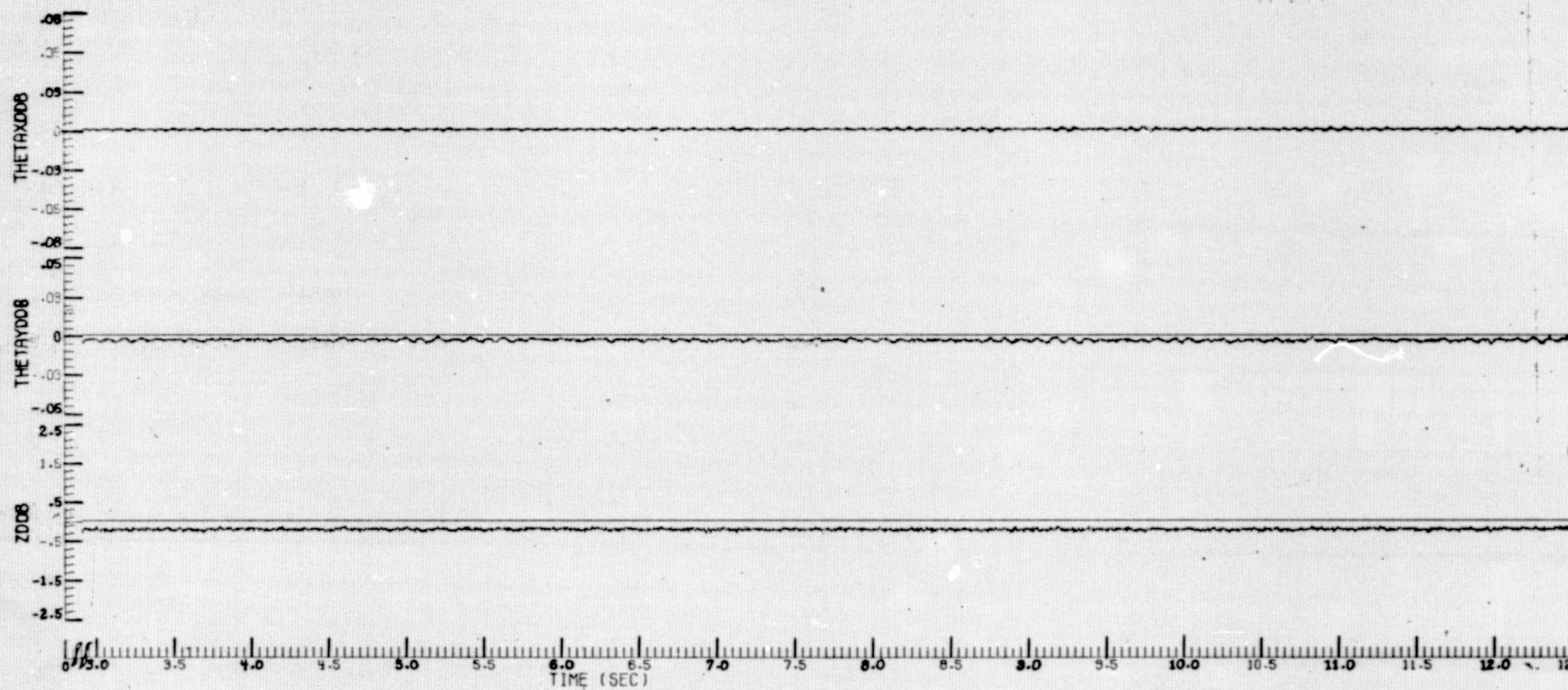
O = 18:47:04 = 67624 sec.

FIGURE 166. TC-3 Centaur First Burn - VLC cg Accelerations - 1024 sps



O = 18:47:16 = 67636 sec.

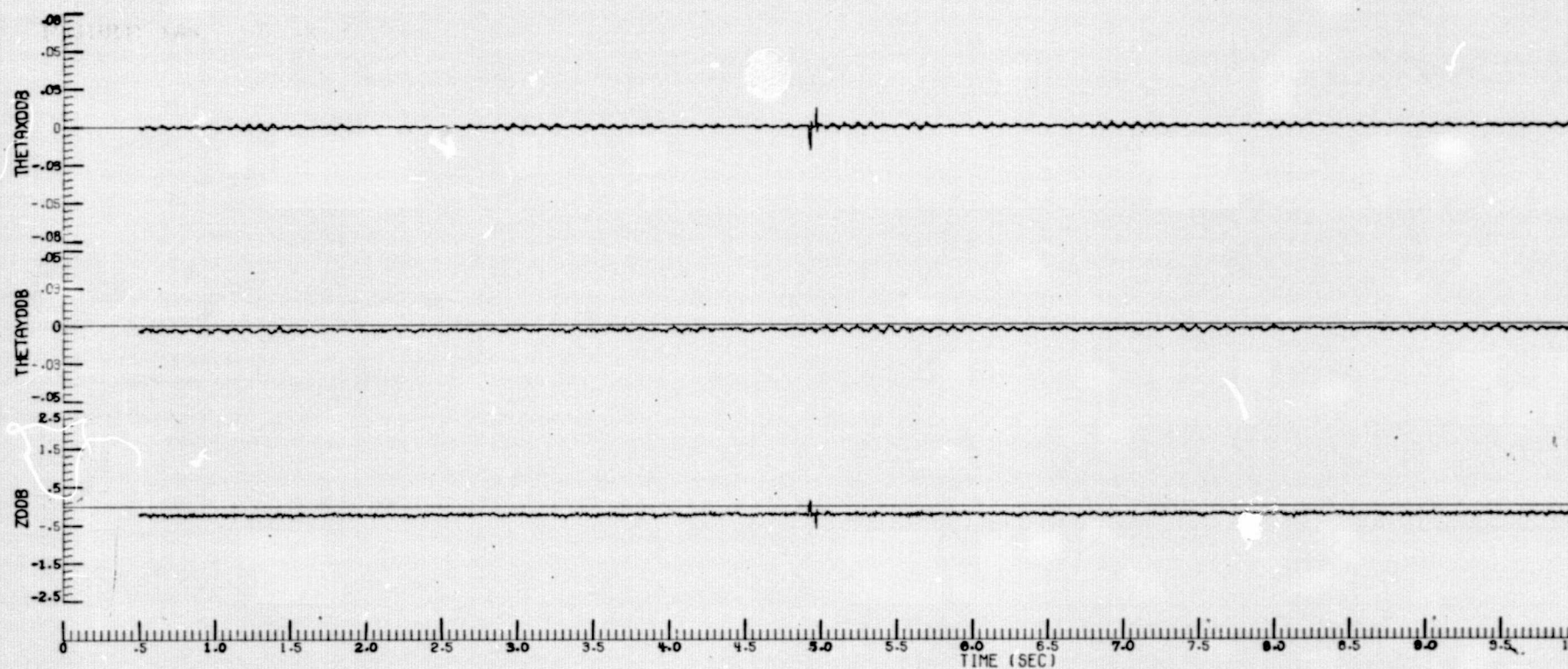
FIGURE 167. TC-3 Centaur First Burn - VLC cg Accelerations - 1024 sps



O = 18:47:04 = 67624 sec.

FIGURE 168. TC-3 Centaur First Burn - Bus Accelerations - 1024 sps

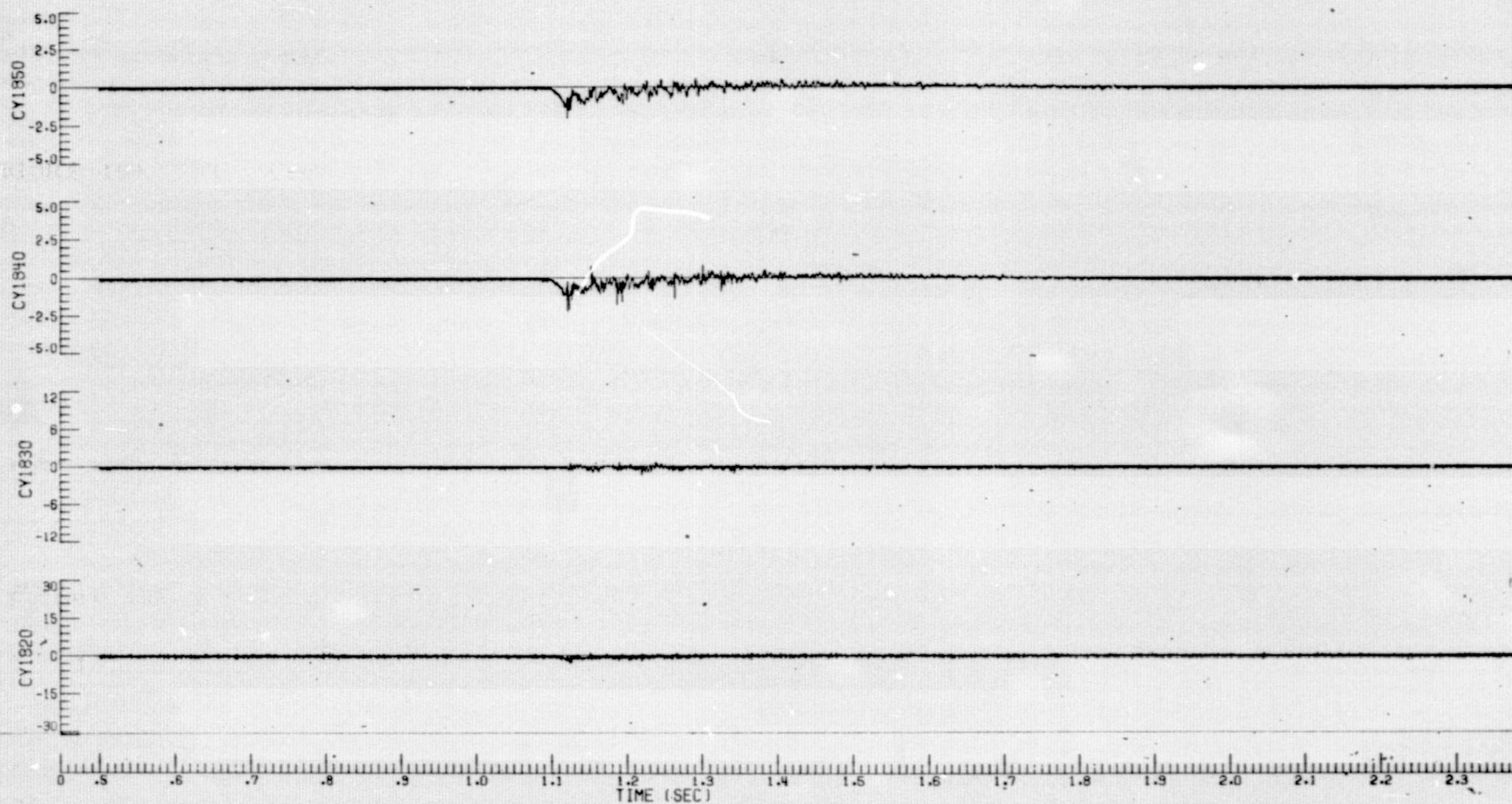
MES 1 + 2.0 to MES 1 + 11.6



O = 18:47:16 = 67636 sec.

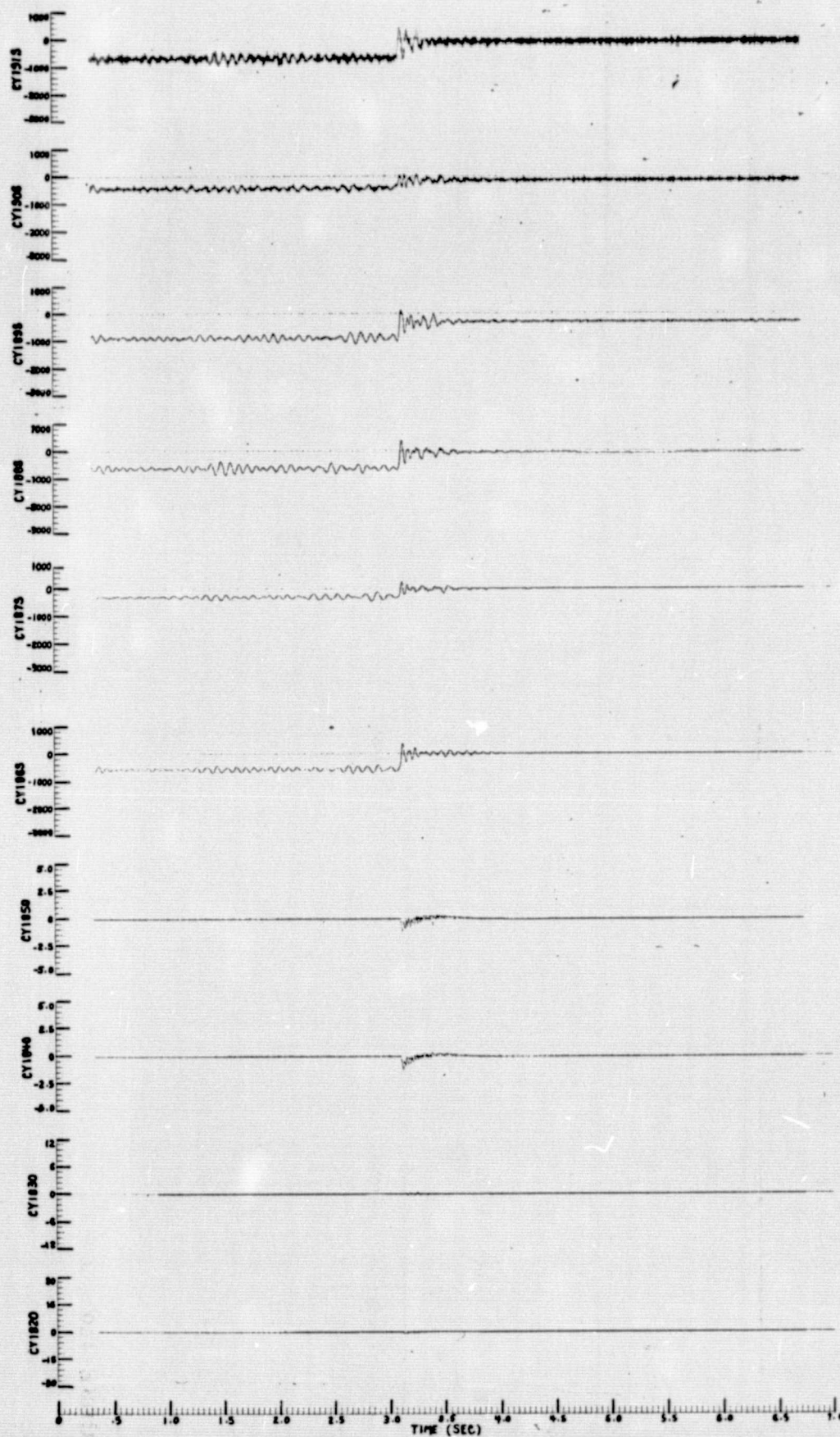
FIGURE 169. TC-3 Centaur First Burn, Bus Accelerations - 1024 sps

MES 1 + 11.6 to MES 1 + 21.1



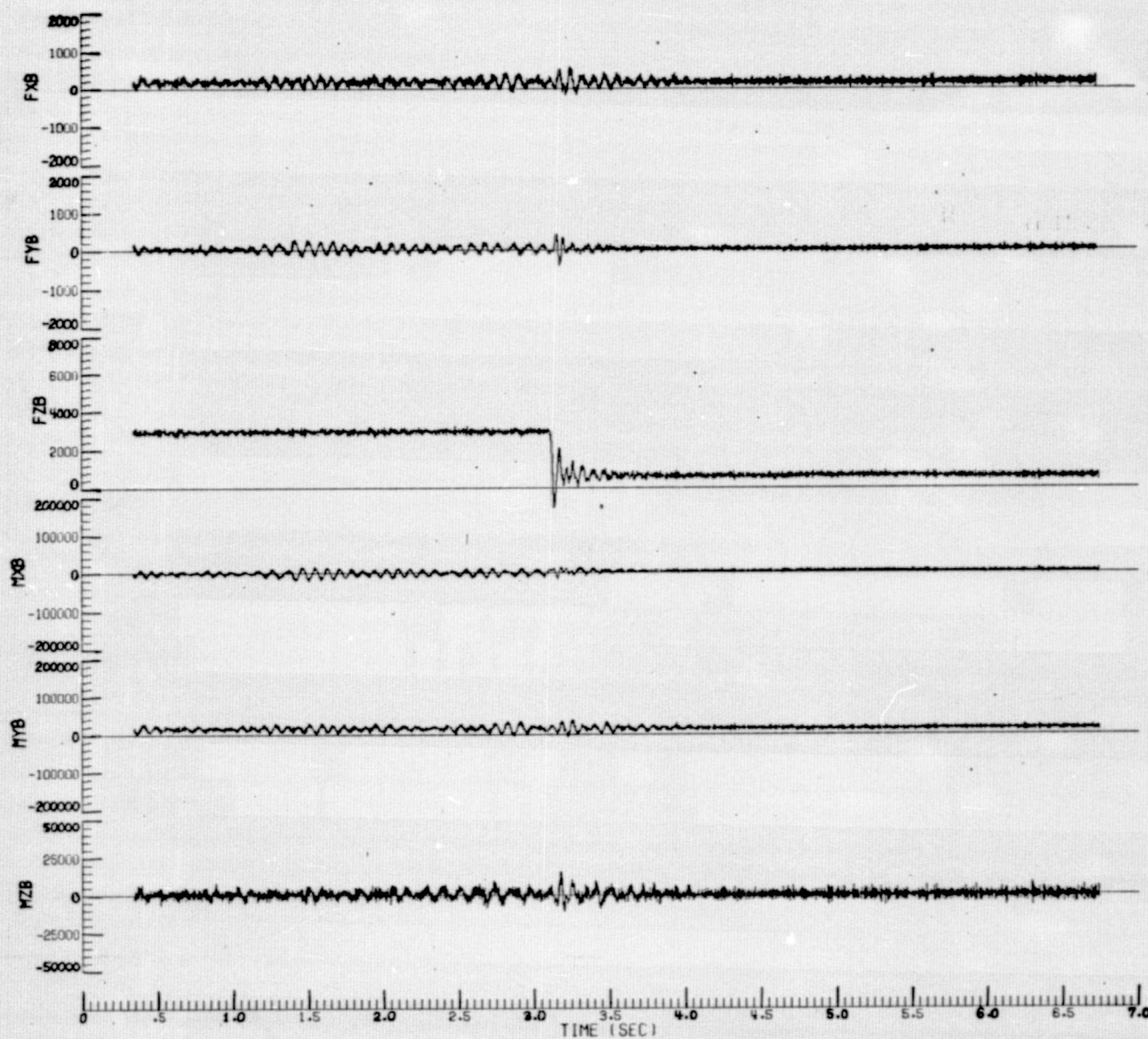
O = 18:49:12 = 67752 sec.

FIGURE 170. TC-3, MECO-1, Vibration Sensors - 4096 sps



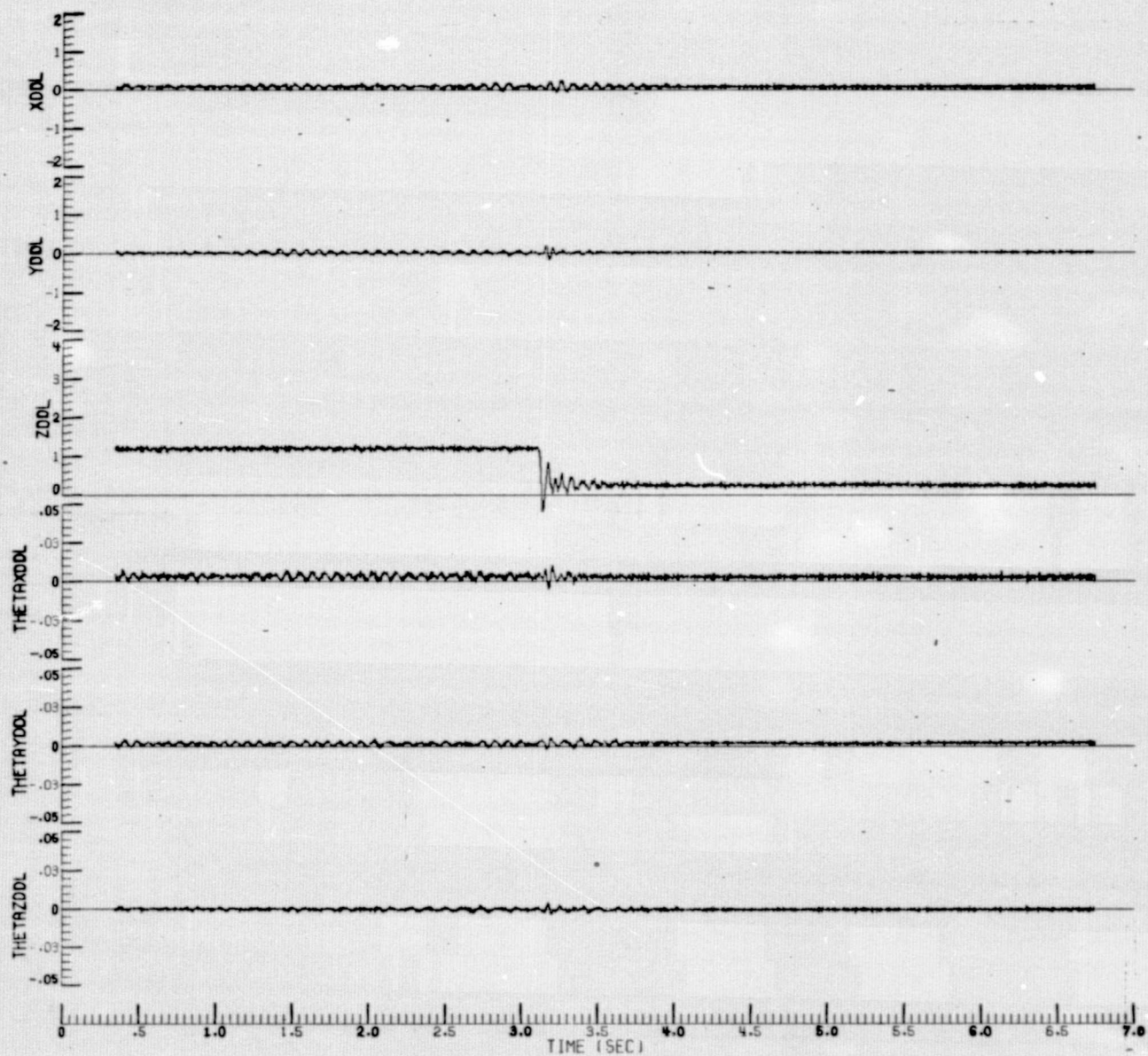
O = 18:49:10 = 67750 sec.

FIGURE 171. TC-3 - MECO 1 - Strains & Vibration - 1024 sps



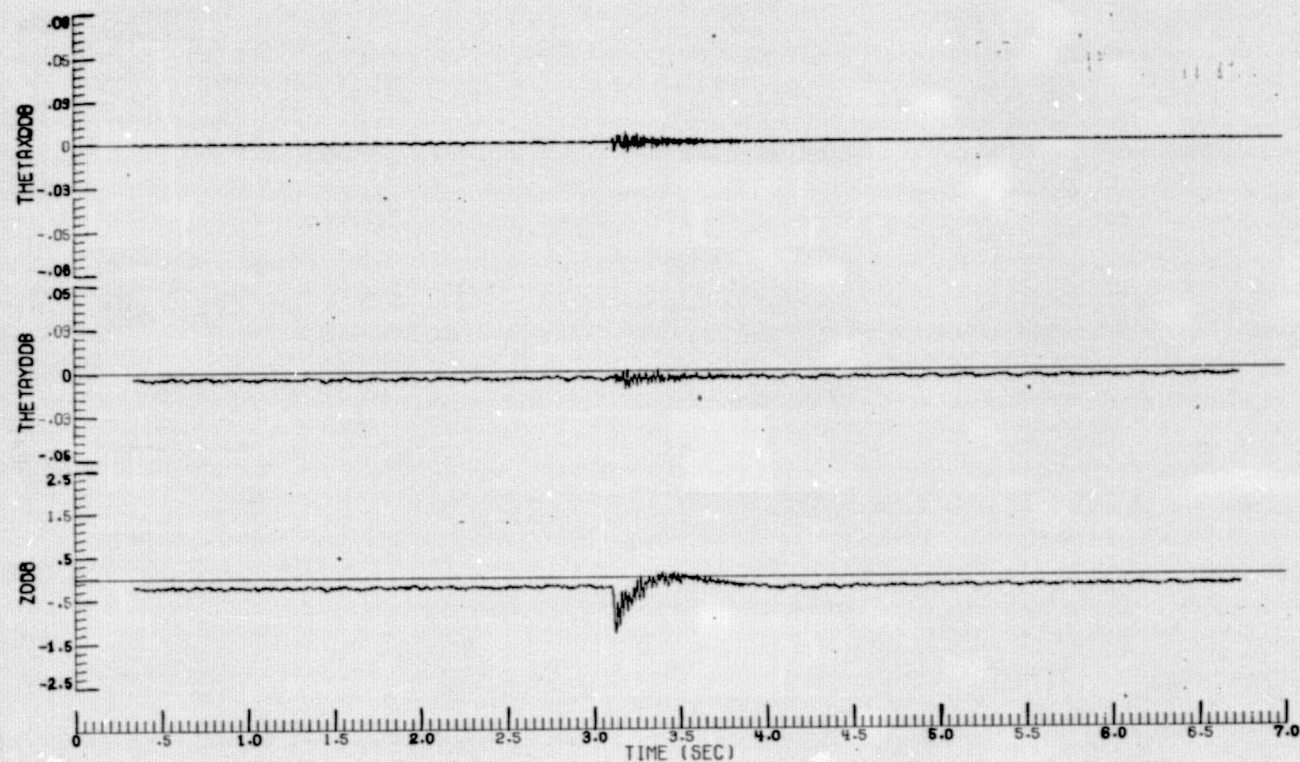
O = 18:49:10 = 67750 sec.

FIGURE 172. TC-3 - MECO 1 - Forces & Moments - 1024 sps



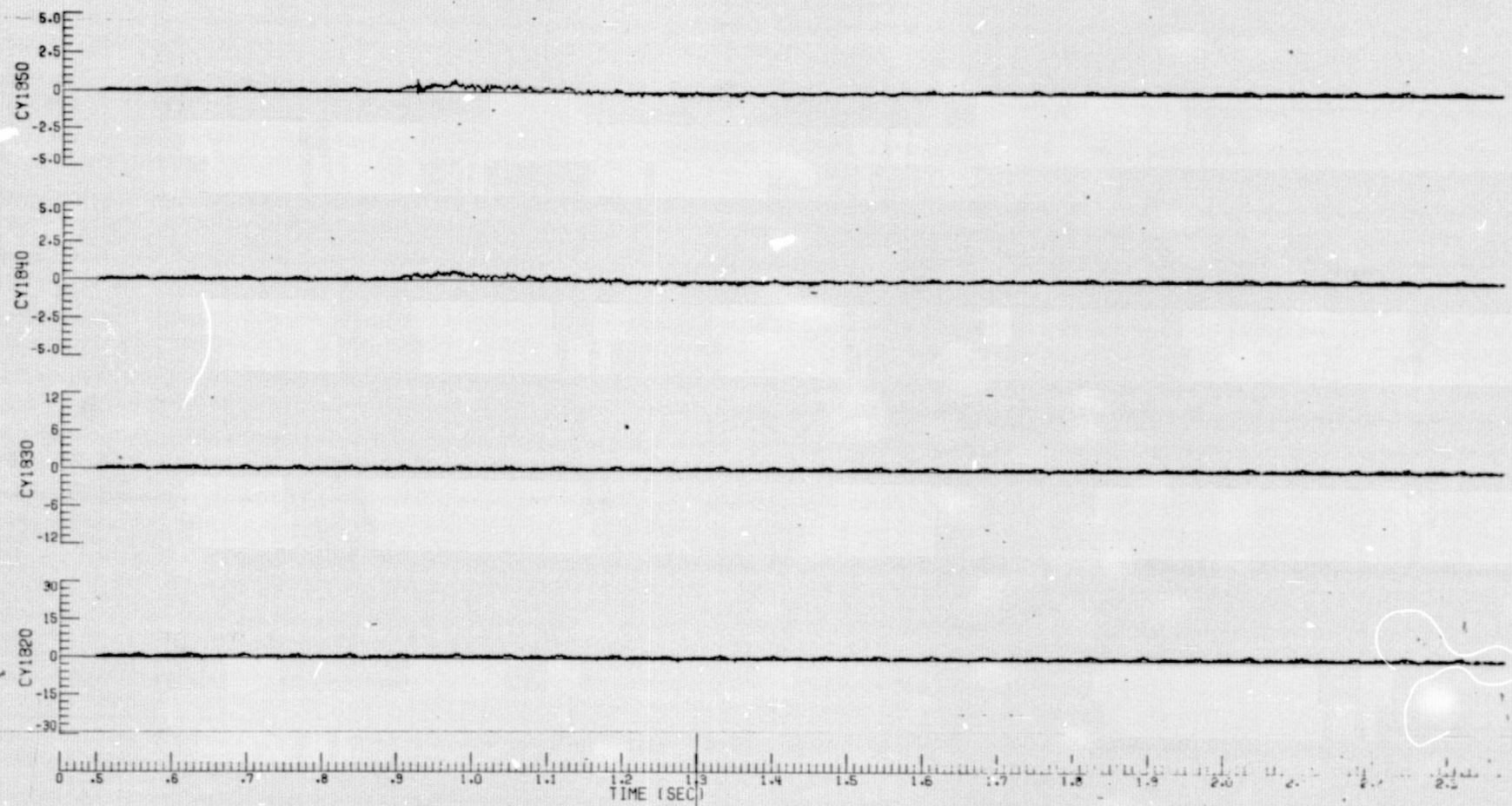
O = 18:49:10 = 67750 sec.

FIGURE 173. TC-3 - MECO 1 - VLC cg Accelerations - 1024 sps



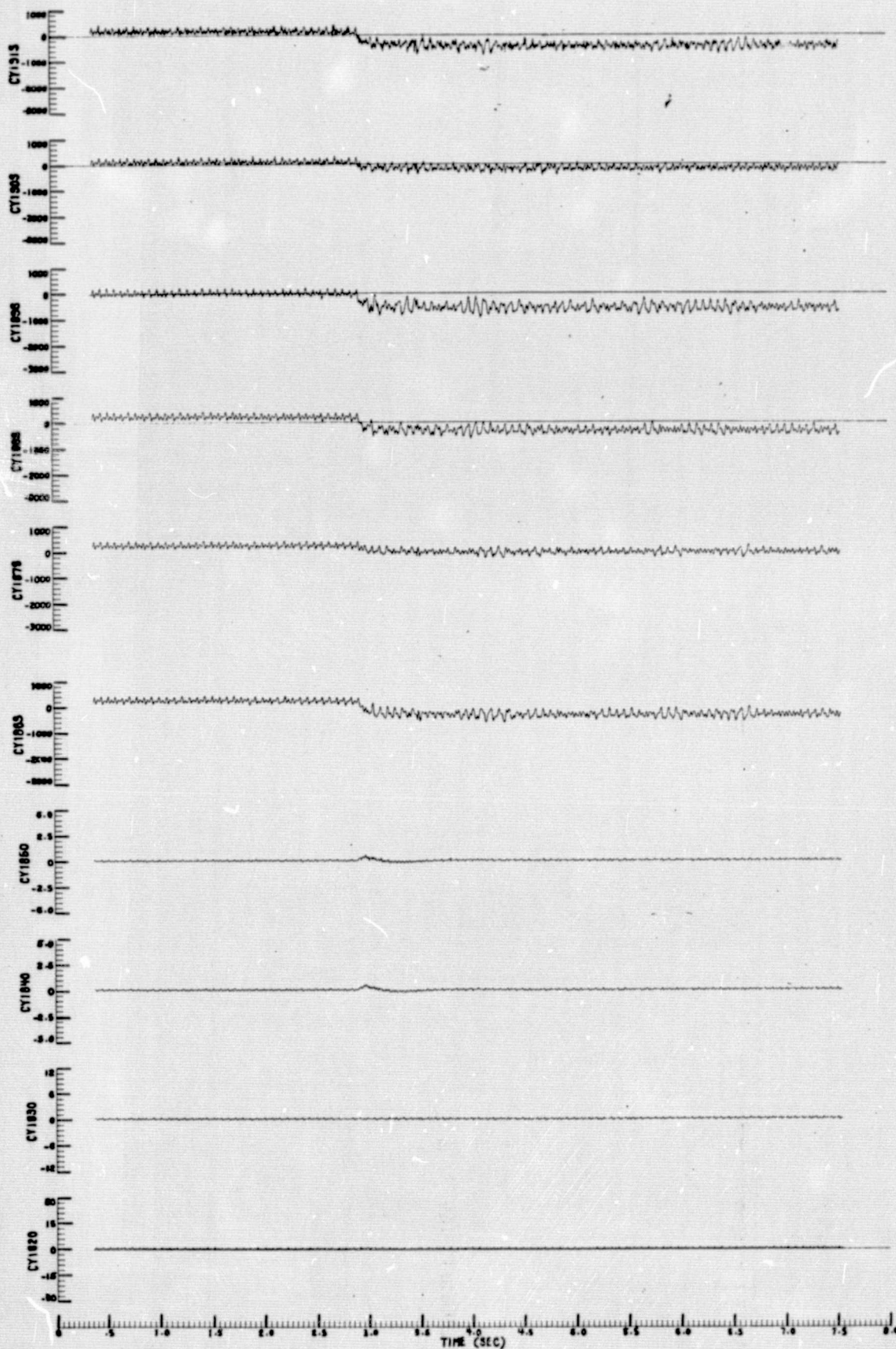
O = 18:48:10 = 67750 sec.

FIGURE 174. TC-3 MECO 1 - BUS Accelerations - 1024 sps



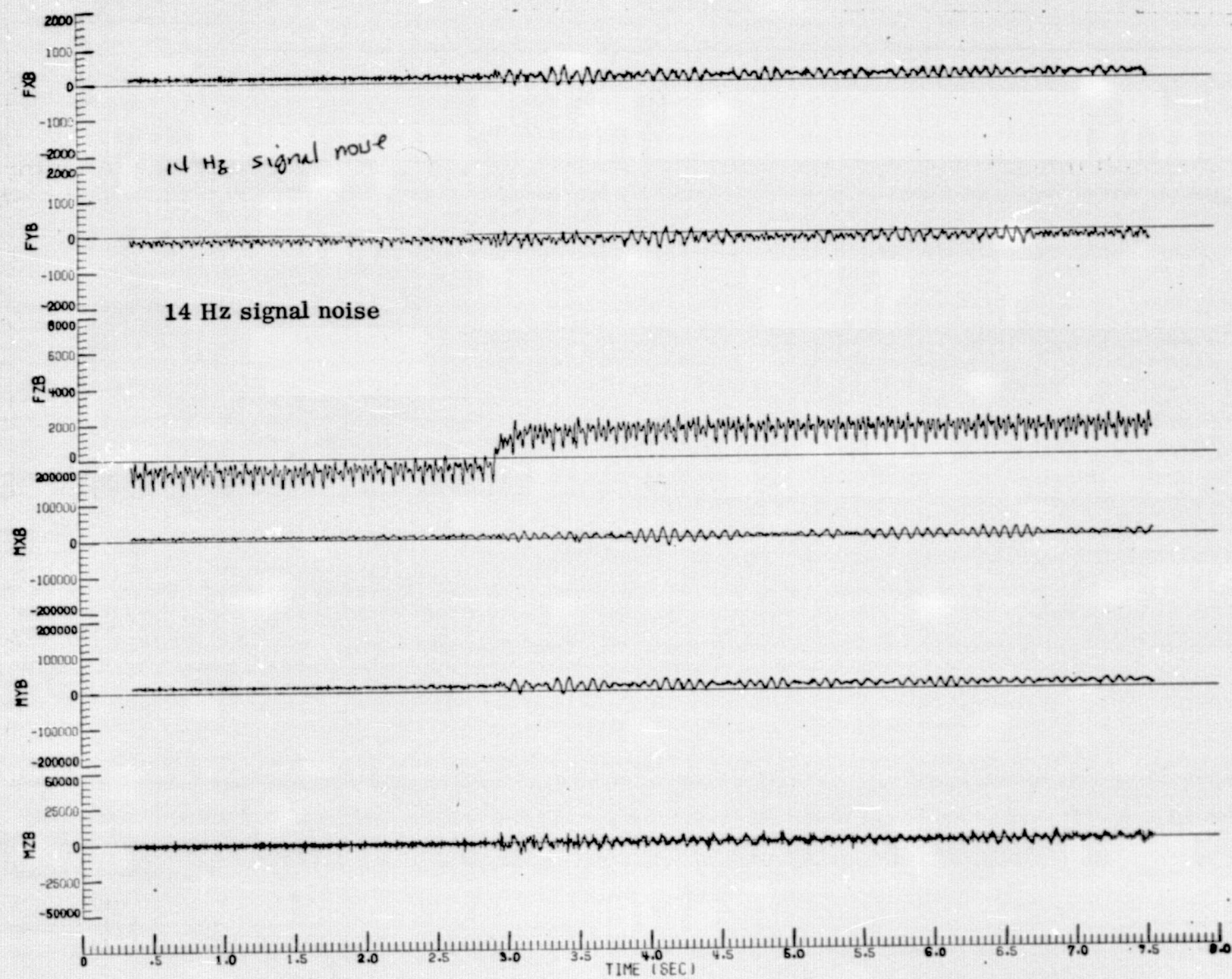
O = 19:07:26 = 68846 sec.

FIGURE 175. TC-3 - MES 2 - Vibration Sensors - 4096 sps



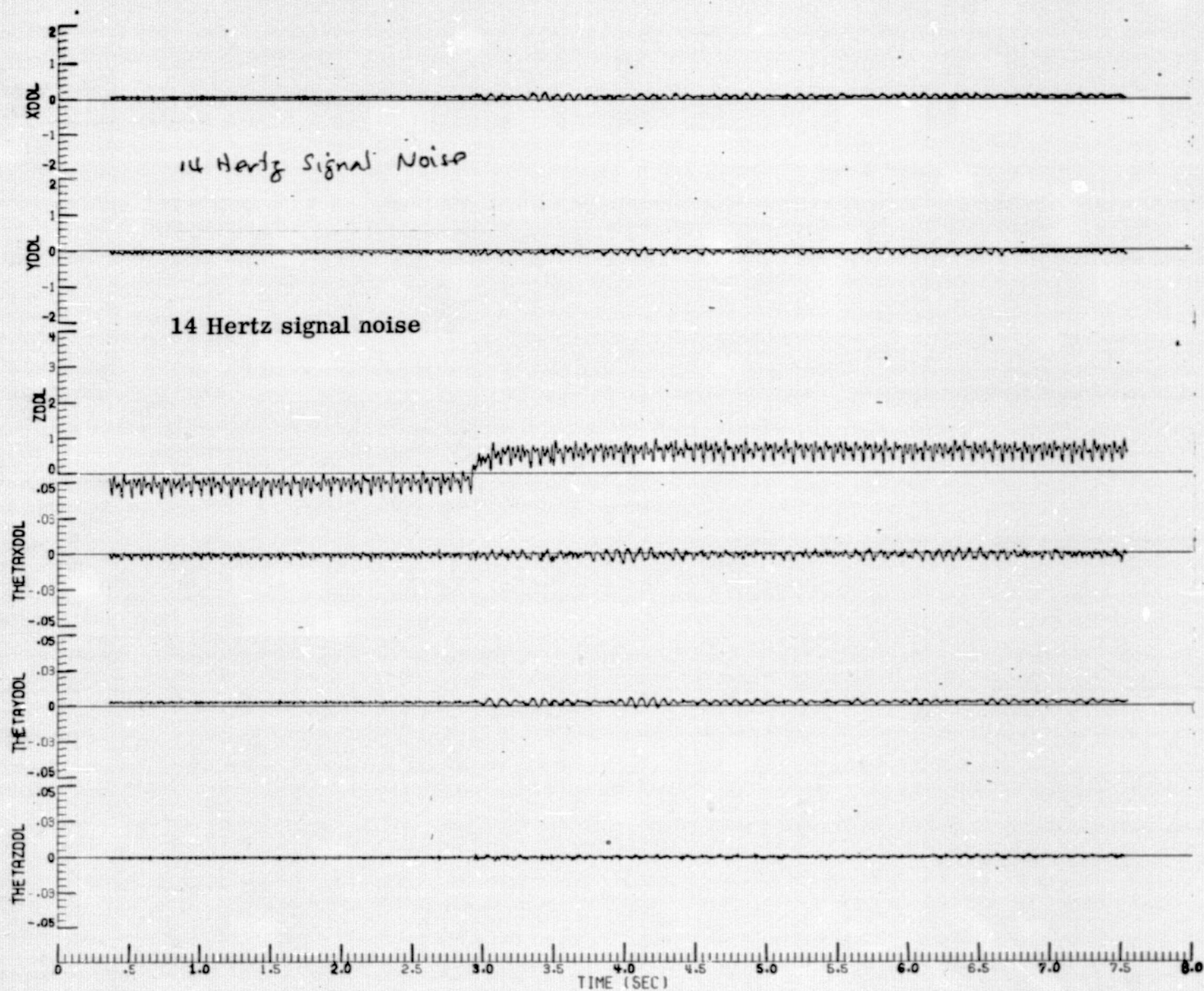
O = 19:07:24 = 68844 sec.

FIGURE 176. TC-3 MES 2 - Strains & Vibrations - 1024 sps



O = 19:07:24 = 68844 sec.

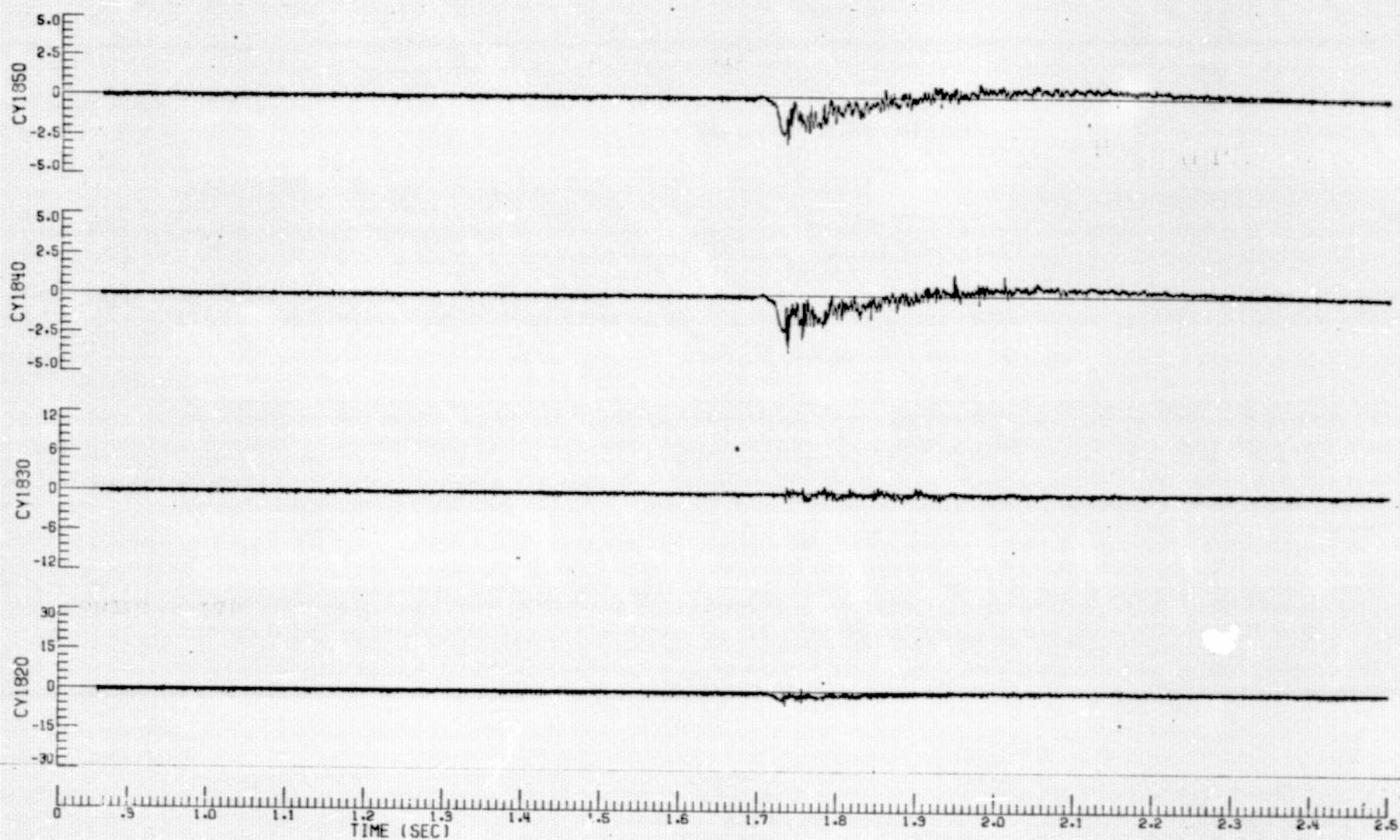
FIGURE 177. TC-3 - MES 2 - Forces & Moments - 1024 sps



O = 19:07:24 = 68844 sec.

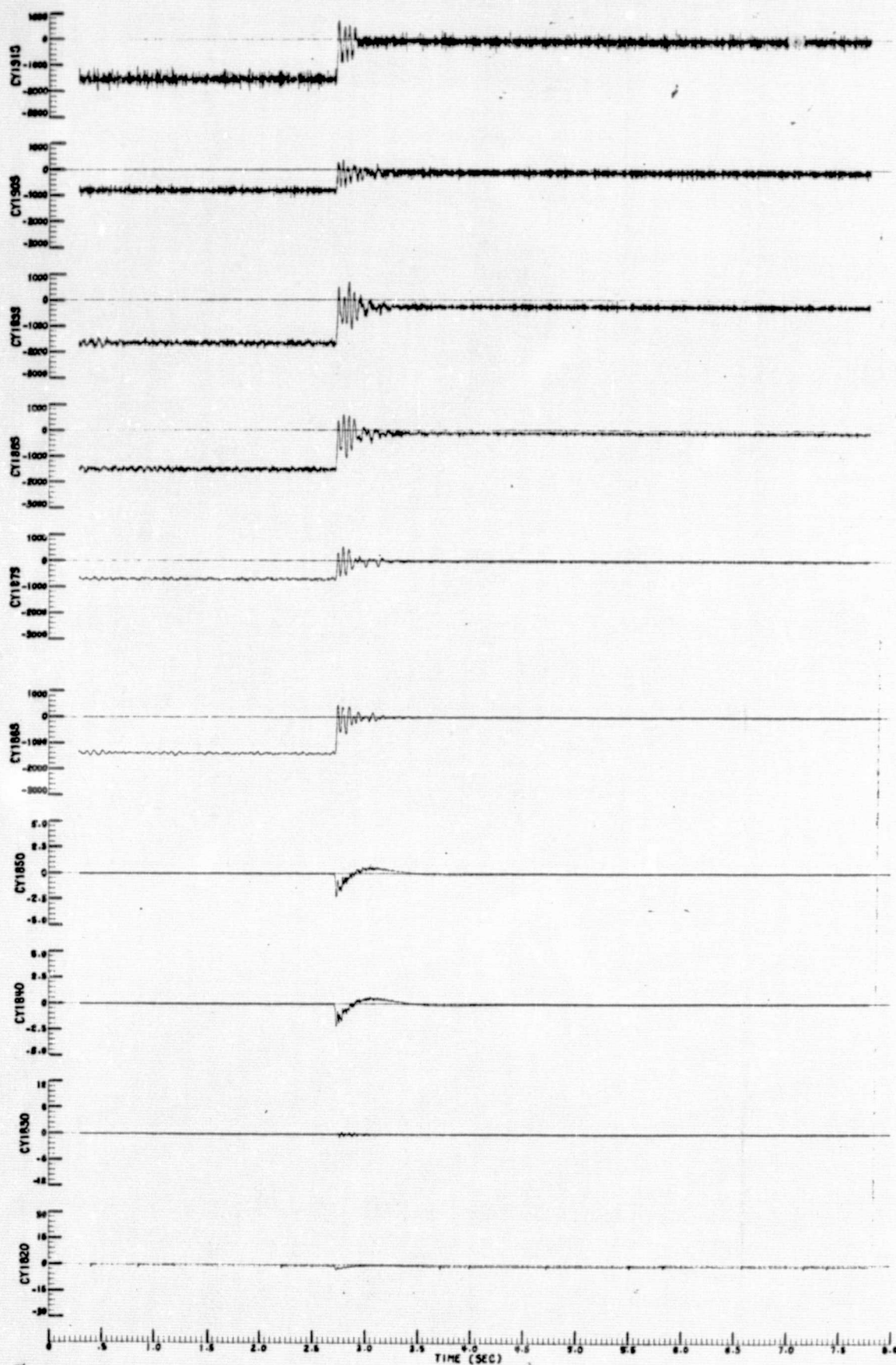
FIGURE 178. TC-3 MES 2 - VLC cg Accelerations - 1024 sps

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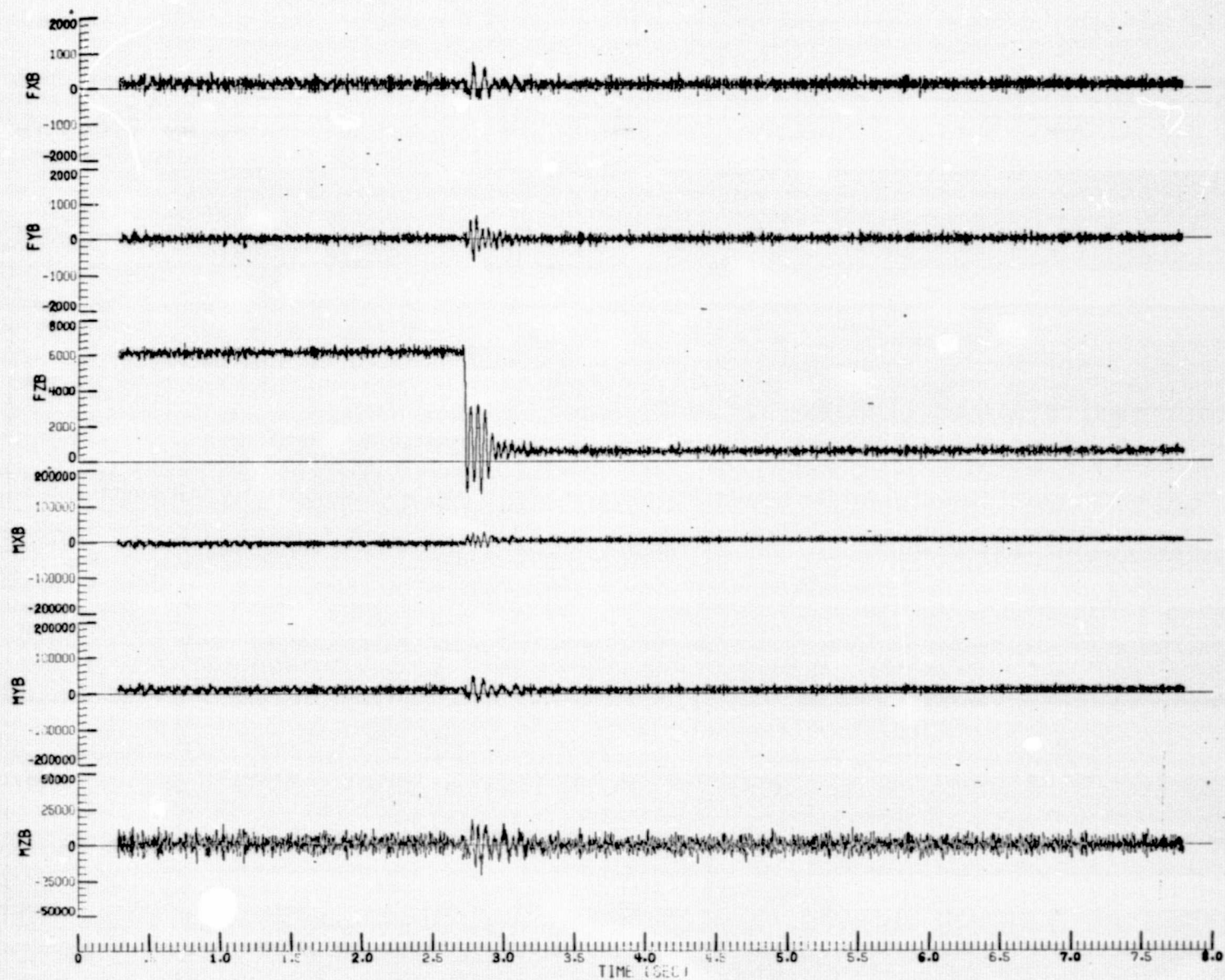
O = 19:12:26 = 69146 sec.

FIGURE 180. TC-3 MECO 2 - Vibration Sensors - 4096 sps



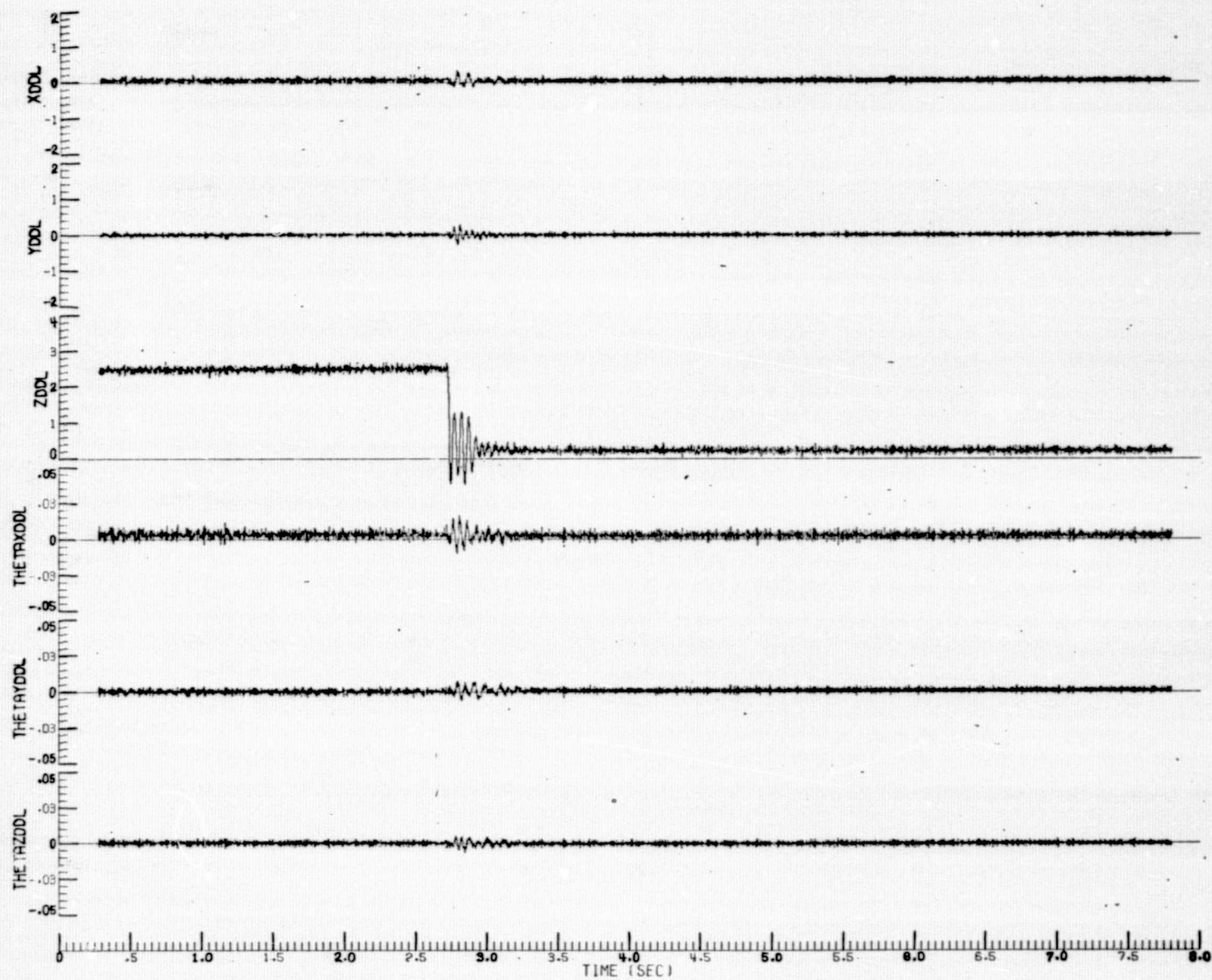
O = 19:12:25 = 69145 sec.

FIGURE 181. TC- 3 MECO 2 - Strains & Vibrations - 1024 sps



O = 19:12:25 = 69145 sec.

FIGURE 182. TC-3 - MECO 2 - Forces & Moments - 1024 sps



O = 19:12:25 = 69145 sec.

FIGURE 183. TC-3 - MECO 2 - VLC cg Accelerations - 1024 sps

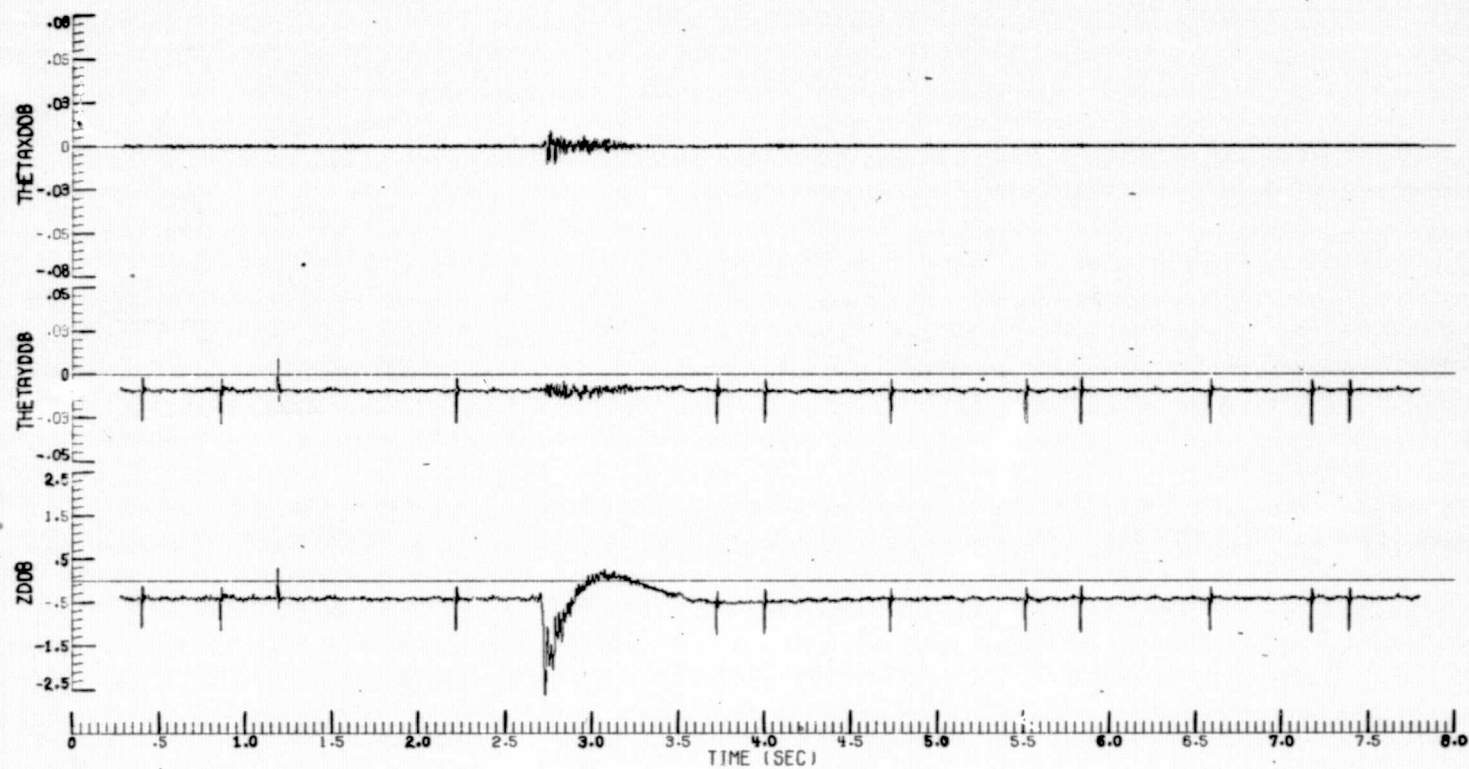


Figure 184. TC-3 - MECO 2 - Bus Accelerations - 1024 sps